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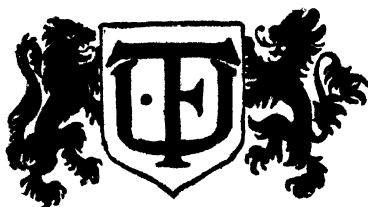
ANOTHER VIEW OF INDUSTRIALISM

By

William Mitchell Bowack

Author of

"Method in Moral Science," "The Formation of Philosophical Opinion,"
and "Poverty and Old Age in Relation to the State."



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Another View of Industrialism

CHAPTER I

INTRODUCTION

Is there room for another work on Economics? Looking at the numbers and the ability of the works already published on the subject, not only in this country but in America and on the Continent, we should at first thought say there was not. Already they number several hundred publications of first importance. While we write we have before us a list of over four hundred works of reputation. And even these form only a small portion of the total literature relating to industry. On second thoughts, however, we think the very number of these works would suggest an atmosphere of dissatisfaction which exists unsatisfied by all the formal treatises yet given to the public. Pending the presentation of a synthesis which will receive the consensus of the world's opinion, we believe that to present a view of industrialism from other than the customary standpoint would be useful and in the way of making for a final and accepted synthesis. This is the main ground for presenting to the public the following pages. But we have others. To our mind our standard writing on economics bears an air of unreality. It is not the economics of actual life. The expositions are those of doctrinaires. Their truths are presented in disproportion. Trivialities and subtleties occupy too many of their pages. More, their science is lifeless, soulless. It does not pulsate with that glowing purpose, that intensity of energy, that pervades economic man. The

motivisation of industry is not adequately realised. The real springs of economic action are not laid bare. Still further, the relations of political economy to other sciences and philosophy are never exhibited, so that the position of economics in our knowledge *schema* is seldom grasped save through subsequent and independent thinking on the part of the student himself. The ground plan of most political economists is limitation and exclusion. They never grade or merge their subject in the surrounding synthesis. They treat it solely as a thing apart, self-contained and sharply differentiated. There is, therefore, left in the mind of the student of political economy a sense of isolation from the living movements of the world around him—a wall of partition dividing him and his science from all that is living, ennobling and gladdening in modern thought and action.

Apart from these considerations, "much has happened since." During the last forty or fifty years, since the leading principles of economic science have been laid down, many new truths have been contributed to philosophy and science. The truth of evolution, of Darwin's theory of the survival of the fittest, was unknown to those that laid the foundations of the science of political economy. In industry itself there are many new forces. The industrial world has been profoundly affected by the railway and steamboat, the post and telegraph, by combinations of labour and capital, by the public press and the growth of public opinion. So important are these new principles that we survey the past, view the present and forecast the future from an entirely different standpoint from our fathers, and from a still more different standpoint than our ancestors. With the new light turned upon modern problems, many new solutions have been found, many new policies have been determined and many new hopes formed. Of all the sciences none have been more deeply affected by these modern movements than political economy. It is time, therefore, that the effect of these new governing principles were recognised and pointed out.

That is a further justification for the publication of the following pages. As we have little to add to the technical knowledge of the science we briefly summarise it. It is presented with unequalled clearness in the pages of John Stuart Mill. We shall therefore assume throughout the familiarity of the reader with that useful text-book at the least.

We have other two introductory observations to make. The first is that we view industrialism as it exists now—now at the beginning of the twentieth century. We are not prepared to despise the useful teaching disclosed by a study of the genesis and history of economic forces. But in a work aiming to present a synthetic view, a picture of the whole industrial movement, and as a movement as it exists at the present moment, to hark back weakens the picture. Besides, the latest movement is the fullest development. It is the point of the wedge driven deepest into the surrounding unknown. It is the point of furthest victory over nature and natural forces.

In the second place, our intention is to present a view and picture, not to conduct a polemic against other opinion, or even justify our own opinion by continuous argumentation. We seek to convince by the simple presentation of the truth. All the old authorities on political economy wrote with the influence and pressure of surrounding error and hostile sentiment weighing deep upon them. Adam Smith, Ricardo, Malthus, John Stuart Mill, were ever marshalling their arguments against the dangerous fallacies and hostile interests of their age. These giants have all been slain. The time is now such that the simple presentation of the truth carries conviction. Nothing is more noticeable in the public mind of the time than this. In the days of Adam Smith and his immediate successors the simple presentation of a truth was not enough. To establish the most simple principles a vast process and power of argumentation had to be used. But let us be just to our own age. Never in the world's history was the world so open-minded, so receptive, as it is now.

Thus we rely upon the effect of the simple presentation of the truth without argument for the public sanction of our opinions.

We say we present to the public another view of industrialism. Another view implies a particular standpoint. What is that standpoint? It is that of "Will and Idea." In the main it is the subjective of Schopenhauer.

CHAPTER II

THE MAIN BUSINESS OF LIFE

WHAT is man's main business in life? What interests him most, receives the greatest amount of attention at his hands, absorbs the most of his efforts and has the greatest amount of influence upon his conduct, character and destiny? The answer is subsistence, the providing himself with food and clothing and all the necessities of life and health and happiness. To live we must subsist; after being born to continue to live is the primary instinct and the first duty of every living being. To subsist we must work or produce. If we do not work we die. If we live and do not work it is because some other person works for us. Every individual by his labour day by day must provide as much of the materials of subsistence as supports himself and those dependent on him for that day. Those that do not work must get an individual or individuals to work for more than their personal needs to supply their (the non-producers) wants. Work then is the lot, duty and privilege of every member of the community. Even if we are of independent means we must take exercise, that is artificial work, to keep us in health. Subsistence, work is nature's foundational condition of life, upon which not only the existence of society but the continuance of the race depends. For a person to object to work or be ashamed of working is as illogical as to object to having a heart or brain. That a person is not ashamed that he does not work shows a mind uninformed or a character depraved. The supply of the needs, wants and desires of mankind is man's main business through life. It affects every person in the

world, as all subsist. No other employment, occupation or interest enjoys this universality. It absorbs more human energy and thought than all the other interests and occupations of humanity combined. Taking all the toiling millions of Asia, Africa, America and Europe together, this question of subsistence, its production and distribution, forms the life-work of 999 persons out of every 1000. We state these figures to be within the mark. We believe them to be well within it. We are content to let them, as thus stated, testify to the magnitude of economic interests.

When statesmen and rulers, or society itself, have formed the opinion that any other occupation or interest is man's primary business, the result has ever been disastrous to the people immediately concerned, as well as to the race at large. In some ages of the world religion has been regarded as man's chief end and his religious interests as the matters of primary concern. All such teaching has been followed by the ruin of the material interests of these peoples, their misery, their moral and intellectual degradation. You cannot subsist on religion. If a person only interested himself in religion he would die if some other person did not work for him and provide him with subsistence. But a person if he produced the means of subsistence would live and might grow fat though he believed in no religion and never had a religious thought in his mind. History bears witness to this anticipation of common-sense. In the Middle Ages religion was supposed to be the main business of life. Look at the results. The inherited civilisation was lost and Europe entered upon a period of misery, moral degradation and debased superstition without a parallel in the world's history. In modern times Italy was dominated by religious interests before her political redemption, and her people were the poorest, the most miserable and the most criminal in Europe. At the present day religion is the chief national concern of Spain, Portugal and Ireland. All three nations have lagged behind in the march of civilisation, and whatever advantages they may thus have

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acquired in the next world they certainly have paid dearly for in the poverty and misery of this.

Is politics the main business of life? Look at the misery and decay of the Roman states, the old German states and political France.

Is military conquest? Witness Greece militant under Alexander, ancient Rome and Imperial France.

Is it knowledge or philosophy? Let ancient Greece tell, her subtle-minded sons immersed in the study and contemplation of the deepest problems of life sold as slaves in the brutal material markets of the world.

Is it pleasure? Witness the downfall of the French monarchy and French society of the last century. These were swept away, unwept and unremembered. Modern civilisation with all its triumphs is just the recognition of the truth that the main and most important business of mankind is the adequate supply of man's needs, wants and desires. When the people's mind is not deflected or artificially influenced, their natural bent, their spontaneous recognition of the main purpose of life, is the supply, conservation and accumulation of the elements of subsistence.

It has ever been so. From the dawn of history until now, and long before history began or record indicates, man's principal business in life has been his provision for living. Civilisation is a graft upon this primal economic effort, as culture is a graft upon civilisation. Religion, knowledge, culture, political science, art and luxury are all subsequent to, developments of and grafts upon this foundational fact of economic necessity and effort.

We have dwelt upon this elemental fact because it is too much forgotten, or at least overlooked, at the present day. Many dangerous movements in modern society and much unnecessary discontent mingles with the labour of our working classes because there is a lurking opinion that work, labour, is unnecessary and a badge of degradation. Let us proclaim the truth that labour is the prime honour as well as the prime necessity of life and health; that so far from being a degradation it

is a duty and a privilege ; that it ought to be, and to a properly-constituted and healthy mind is, a genuine source of happiness and pleasure. We believe in the dignity of labour, the natural happiness that lies in work.

We have said that industry is the main business of life, let us also point out that it is the most permanent of all forms of activity and opinion. Being of the nature of a necessity, it must be so. But we do not dwell on the necessity. We point out the fact of the permanency of industry. Religion, philosophy, science, art, political institutions have all come and gone. Even civilisation and races have been born and disappeared. Yet the principles and practices and movements of industry have, throughout all change, and antecedent to all other forms of activity and thought, been a self-subsisting and continuous movement.

We interpose here, at the very beginning of the work, an observation which, being of the nature of an ultimate generalisation, would appear to be more appropriately stated at or near the close. We state it thus early to give the reader a unifying principle to carry forward in his mind through the succeeding pages. We observe of industry in general, of all its phases and interests, of all particular arts or transactions in industry, that they are mutually and jointly beneficial. There is not such a thing as an isolated, personal advantage in industry. There is not such a thing as an economic interest which exists to the disadvantage of the rest of industry. All industry is interdependent, is actively correlated, and whatever interest furthers its own interest, in virtue of that fact benefits all the other of industry. It is the same with individuals. An individual produces and sells, certainly in the first instance in his selfish, or at least personal, interest. But he to whom he sells and from whom he receives payment is equally benefited. Industrialism is a universal personal advantage. But universal personal advantage is, and must be, mutual advantage. In helping himself the industrialist assists his rival, his neighbour and his country.

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The foundation of industry is useful, beneficent action. If it is not useful and beneficent it is not industry. For instance, much is said in this and other countries of the disadvantage of strangers entering a country, making a fortune in it, and then returning to their own to spend in leisure at home what had been acquired abroad. Now the point is, these strangers conferred as much, indeed more, benefit upon those they lived and served among than they received in return. Take the Briton abroad: in South and North America, in Egypt, India, China and South Africa. These citizens generally return to enjoy at home the fortunes they make abroad. But did they give no return to these countries for the fortunes they made? Even in direct benefit they were only paid for honest hard work performed by themselves. The foreign community received and enjoyed all the advantages for which they paid. In addition the Briton left behind him all the organisation, the new wants and their supply, all his contributions in taxes and newer thought to the country in which he lived and in which, as we say, he made his fortune. Yes, but he left behind him a vastly greater fortune than he took away. We want then, as a central thought, to read these pages through with the conception that industry is a common and mutual as well as a personal advantage.

CHAPTER III

MAN THE ECONOMIC BASIS

ECONOMICS is the science of subsistence—the satisfaction of the needs, wants, desires, advantages and pleasures of humanity—as industrialism is the movement of realisation. It is men's needs that are to be satisfied, and it is man himself that satisfies them. It follows that in all movements in economics, whether as to the origin of demand or the means of supply, man is the main factor. He creates the need, he contrives its satisfaction. But the average man, with his energy turned towards the supply of his needs or wants, can always by his own labour in ordinary circumstances produce several times over what is necessary for his own subsistence. Such is the inherent vitality of the higher races that they have a power of energy far surpassing the mere ordinary requirements of life, and which they can devote to the accumulation of hoards of wealth or to many other and higher purposes. The primary source of all wealth is therefore population. The greater the population the greater the potentiality of wealth. Whatever contributes to the natural healthy growth of the population is a matter of the very first economic importance. No contribution to the world's potential wealth equals that of a large family of healthy and well-brought-up children. It is in that fact that the importance of the hygienic condition of our labouring classes lies. They must always supply the bulk of the raw material composing economic man. If their food is good and abundant and their homes healthy the economic foundations of society are well laid and sound. The initial economic vitality, the economic force and

energy is there, its direction to be determined by the moral ideals and the intellectual environment of the time. It used to be the bugbear of political economists, the pressure of population upon the means of subsistence. The pressure upon the means of subsistence is nature's constant call for economic efficiency. It is the law affecting all organic life that efficient forms bear within them the power of multiplication and increase. It shows their vital energy is still dynamic, beyond the requirements of the mere maintenance of the organic *status quo*. The element of potential progress is still unexhausted. A stationary population shows a race trembling on the abyss of senile decay or economic exhaustion. We say it is impossible under any reasonable conditions, in any reasonable period of future time, for population to outstrip, or even approach, the limits of subsistence. Each individual born into the world only brings in one individual's wants, but, at the same time, several individuals' supply. Increased population means increased demand, but also many times over increased power to supply these additional demands. Nay, more, as the world moves on the productive power of each economic unit is always increasing. If the ratio of power of supply of reasonable need in our present economic unit is as three to one, in a few years the ratio will have increased to five to one, owing to the increased use of machinery and the application of fuller knowledge. What is called pressure upon the means of subsistence, by Malthus and Mill is really imperfect distribution of the population. These writers wrote with all the limitation and narrowness of nationalism upon them. In America, Africa, Asia and Oceanica there is room for many times our present population, even under our present very slovenly, wasteful and imperfect methods of production. Even when every foot of cultivated land is occupied, we have still the sea as a source of subsistence. The potentialities of marine culture seem endless. In the cultivation or utilisation of edible seaweeds, and in ocean pisciculture, we have an untapped source of subsistence whose magnitude has

never even dawned upon us. The natural increase of the population is therefore one of these fundamental conditions which lie at the root of all healthy, and indeed all possible, economic advance, one we should gladly welcome and not fear, as has been the traditional position.

After the number of the population their ^cmóral is the next consideration, their personal character and ability. We place character first because we think it the more powerful social force. It is only when society has achieved a static moral condition that industry as a recognised condition of human activity can arise. Moral sentiment is a binding relation which must be strong enough to counteract the many individual and disintegrating agencies inherent in the battle of industry. Morale is a silent form affecting all classes, as powerful among the poor and humble as among the rich and great. It determines the motivisation of industry. It raises the ideal of life and the standard of living. It thus determines personal expenditure, accumulation and economic purpose.

On the other hand, ability is not only the guide of industrial energy, but by its discoveries and inventions it is itself an economic force. The mind of man is now a more potent industrial factor than his body. Mental ability is of more importance than physical strength or technical skill. Ability is the necessary guide of labour, is indispensable to labour, while, on the other hand, to ability it cannot be said that any particular form of labour is equally indispensable. In apportioning the total results of industry as between ability and labour, we cannot but concede to the former the largest proportion of the result.

If we wish to realise the difference between the industrial effectiveness of an ordinary population and that of a people characterised by a high morale, by powerful character and strong intellect, we may compare the volume of external trade of two European countries, Holland and Spain. They are a great contrast morally and intellectually; while no one who has seen the

capacity of physical toil the Spanish miner and peasant is capable of can say that he is any way behind the corresponding class in Holland. At the same time, while Holland of all countries in the world had originally the fewest natural advantages, historic Spain is one of the most kindly blest of all European states by mother nature. We find that for the year 1900-1901 the volume of external trade of the kingdom of Holland amounted to £58, 18s. 9d. per head of her population, while that of Spain for the same period amounted to only £3, 10s. 2d. Surely that is an outstanding lesson. Holland is moral, evangelical, educated, capable and free. Spain is formal, sacerdotal, ignorant, priest ridden, and only secured constitutional government in 1876.

Man is the sole creator of desire and wealth. Everything, therefore, which conduces to increased human vigour, to health, to the prolongation of the period of economic efficiency, to the saving of time, to the placing of the economic unit in circumstances of most effective action, are all matters of foundational economic importance. An abundant supply of cheap and wholesome food among the general body of the people enables them to work more, to work more effectively, and, what is very important, to work with greater ease to themselves. Toil becomes less toilsome. Indeed, toil to a well-nourished man is a positive pleasure. Human energy must find an outlet. Work becomes a matter of voluntary choice. Besides, the surplus energy above the supply of mere needs being increased, man turns his attention to other matters, to increased pleasures, more knowledge, the well-being of his neighbours, the welfare of his country. Whereas, under conditions of bare nutrition his energies and interests are exhausted in the mere physical fact of living.

All matters affecting man's health, the air he breathes, his housing, the suitability of his food, his clothing, are matters of first economic importance, for they affect the energy and vitality of the economic unit, the real source of all wealth and power.

The prolongation of the period of economic efficiency is very important. There are two periods of economic negation in every individual's life—in early youth and in old age. It may be said that an individual cannot be self-supporting until he reaches the age of seventeen or eighteen years. As a rule also a man has passed the age of economic efficiency at sixty. In few employments can a man of sixty do the same day's work as a man ten years younger. Now it is estimated that to rear, educate and specialise each young person born into the community takes a sum of from £200 to £300. In some cases of course it will take ten times as much. But the average cost of rearing each individual to the age of economic efficiency is variously estimated at from £200 to £300. Certainly the last figure in recent years seems the nearest the mark. During the labouring period of forty-two years, between the ages of eighteen and sixty, this initial capital sum has to be recouped. There are 15,000,000 wage-earners in the United Kingdom. If by more healthy and intelligent upbringing and by more efficient education and technical instruction you can anticipate the period of economic efficiency by two years, if at sixteen instead of eighteen years the average citizen was made economically independent, what an immense increase in the economic resources of the country would ensue. It would mean an increase of 5 per cent. in the economic power of the country. Similarly, if the conditions of undiminished vitality could be postponed from sixty to sixty-five years, as we believe could be done, another immense advantage would accrue. In this city the death-rate has been reduced 3 per thousand in twenty years. Facts like these give hope. We believe we have not nearly reached the period of practical longevity. We see no reason to contemplate any period under seventy years of age as that of impaired economic vitality. To add seven years to the working life of the country would be a vast access of wealth or alternatively an immense increase of potential power, profoundly affecting our national character and position in relation to the rest of the world. All move-

ments of limitation upon economic efficiency or effort or persistency are hurtful. Viewing the world as it is, there is room for the beneficial expenditure of a thousand times the amount of human labour, skill and capital yet bestowed upon it. It is new outlets, fresh directions for human energy, that are needed, not limitations upon work. The real source of wealth lies always in the prolonged efficiency of the economic unit.

All arrangements and inventions which have for their object or effect the saving of time are of the same character and usefulness. They extend the period of economic efficiency. They practically extend the period of human life. Our bicycles, tramways, steamboats and railways save the expenditure of human energy, the most precious and expensive of all forms of force. They enable the individual to crowd more accomplished results into his life than formerly. In the case of a person whose occupation is travelling or whose pursuits require his personal transference from one place to another, to increase the speed of locomotion or transfer from three miles to six miles an hour saves half an hour to that individual, adds 50 per cent. to his time. Similarly, to change the six miles an hour of the gig of the traveller to the sixty miles of the express train multiplies his time, his economic day by ten, or, if the time element is a contingent loss, diminishes it by nine-tenths. Not only so, but the person while being conveyed, is resting. A working man going three miles to his work is not only being conveyed in half the time to that work, but is being rested at the same time. Before tramways and railways a workman arrived at his work with the weariness of a three-mile walk upon him. Now he lands at his work fresh, rested and enlivened by his three-mile ride. He can even read or think over his work while being conveyed, so that the mere physical conveyance is a mere bagatelle in the aggregate economic advantage. So imperceptibly have the means of facile locomotion grown upon us that we seldom realise its importance. The writer has journeyed from

the Orkney Islands to Penzance in less than thirty hours. That included two breaks in the journey. Now fifty years ago that journey of twenty-four hours' actual travelling would have taken, under the most favourable circumstances, seven days, in average circumstances a fortnight, and often three weeks or a month. Now suppose a person required to go from Orkney to Penzance and back all his working life time, say forty-two years, his economic life under modern conditions would be extended from forty-two years to 294 on the first presumption, and to 588 years on the average presumption.

All these considerations connected with the transference of individuals are important, but we have yet to mention the most important. To transport the individual is to convey the economic initiative, the individual with his own power of observation, his own judgment, to the precise spot, to immediate contact with the phenomena, to the economic crisis to be dealt with. We all know that the most efficient second-hand information is never so informatory, so fully impressive upon our mind, as the facts or circumstances observed and judged upon with our own eyes on the spot. No amount of confidential correspondence, and still less telegraphic communication, can convey or take the place of that actual touch with actuality solely the possession of the man on the spot. Ministers treating through the best of ambassadors, commanders receiving the reports of the most able brigadiers, know that, with all their loyalty and value, five minutes' observation on the spot themselves is worth far more than the most elaborate and conscientious reports from subordinates. So it is in economics. Our rapid and convenient means of transport means first of all and foremost of all the more frequent placing of the right man at the right moment at the right place. It is the personal eye, judgment and initiative of our captains of industry more frequently planted in the middle of the economic crux. We too frequently speak of the laws of industry, of the industrial classes, as though

economic movements were something aggregate and abstract. The aggregate of the national industry is just a series of individual events all depending upon personal knowledge, personal observation and judgment, and carried through by personal initiative and energy. That we believe to be the main service to modern industry performed by railways and tramways—observation and decision on the spot.

Though no form of facility of communication can take the place of the transference of the individual himself, rapid means of communication between man and man multiply the number of economic events or operations in our individual experience, and thus increase the length of the individual economic day. Letters formerly took three days to go to London, now they are delivered from post to post in twelve hours. Let us see what is involved in the shortening of the period within which transactions can be accomplished. There is first their number, as profit initially depends upon the number of economic opportunities; the more numerous the economic opportunities the more numerous the opportunities of profit. But as you immediate your timeous relations in transactions you reduce the extent of the capital required. You also reduce the number of individual circumstances requiring supervision. On the other hand, lengthening of time means increased risk, multiplies the number of possible economic mal-adjustments, of failures to complete the economic synthesis, as necessary and as true in individual transactions as in a national policy or a world's movements.

The number of communications between individuals transmitted by mail or telegraph in the United Kingdom is something enormous. In round numbers last year they exceeded 4000 millions. We cannot contemplate such a gigantic fact without being conscious that it must have an enormous influence upon the economic status of the country. We cannot produce figures or statistics directly connecting the increasing power and wealth of the world with the

increased means and rapidity of inter-communication. Yet we are satisfied with their presentation as co-existing facts, with their synchronism in time, with their necessarily intimate co-relationship, to attribute to the more rapid personal means of communication a large share in these modern economic results. Just in the same way, though it is difficult directly to prove the increased advantages of the telegraph and the telephone, we have a firm conviction that advantage is there. A letter is a written report of a conversation you would have delivered by word of mouth if the person to whom that letter was addressed was personally present. It is a substitute for a personal visit or interview. It saves the labour, the time and expense of a walk or a journey. It does not pay you to write a letter to your neighbour or your customer a couple of streets off. Besides, you would miss the opportunity of seeing him, of fixing your eye on him and reading his inmost soul. You can interview him in less time than you would take to write to him. But when a distance of a few yards is extended to a quarter of a mile or upwards there is a saving of time, labour and money in the use of the pen. As the distance increases between the negotiating factors, so does the advantages of correspondence, until you reach such distances that correspondence is no longer optional but compulsory. Thus the numbers of business transactions a person, by the aid of correspondence, can carry through in a given time is much increased. The economic individual life is lengthened. Against this increase of economic opportunity you have to set the fact that you do not see your correspondent eye to eye to judge of him—his energy and moral worth. Neither do you see the influence your communication has upon him. Correspondence also suffers from the lack of direct, immediate question and answer.

In the case of telegraphic and telephonic communication we have a new and startling innovation. It is too early yet to perceive the full character of

their influence. They save the time of the communicator and, in the case of the telephone, dispense with the services of an intermediary. Time and distance are practically annihilated. In a year or two a person in London will be able through the telephone to communicate by word of mouth, to enter into verbal conversation with a person in Pekin. Here is a great access of economic power, a further saving, not only of the energy, but of the time of humanity. The numbers of transactions possible to each individual will be multiplied. But the area of the economic field will be still more enlarged. A person sitting in his office or parlour feels a sense of thorough command over all the economic forces under his roof. They are all at his hand, within easy reach. He has just to touch a bell and the factor wanted is at his elbow. Now the telephone just places all the world in that instantaneous and effective relation that an individual's own counting-house and factory formerly stood towards him. The telephone is the industrialist's wide-world mouthpiece.

While we are on this matter we may mention another point. These mail, telegraph and telephone transactions suffer from an emasculation of personal elements which reduces them to more purely economic conditions. In all matters of business carried on through the personal agency and direct contact of individuals there are always elements introduced not purely economic. Many considerations and influences of a personal and public character affect our judgment over and above the nature and value and advantages of the transactions immediately being negotiated. Considerations of friendship, of vanity, or even of fear, or at least of lack of moral courage to say no or yes in the presence of a more powerful personality, are very common. Now, this element of mechanical mediation subtracts all these personal and non-economic interests and associations, and reduces these events to economic incidents *per se*. We can all be brave out of sight of our enemies, or rivals, ay, and even of our friends.

CHAPTER IV

AGGREGATION, DISTRIBUTION AND ENVIRONMENT OF THE PEOPLE

AFTER the numbers, health, character and qualities of the personal unit, his associations with his fellows and their aggregations are of most importance. We must remember that economic success depends on circumstances outside strict industry as well as on circumstances formally within it. We do not deal here with the organisation of industry itself, but with those aggregations outside of it. The nation is the most potent of these. We regard it in its simplest aspect as a section of the world's population under one acknowledged head. Within the limits of the nation it is important that there should be concord and confidence. In a state torn by internal dissension the conditions of friendly service, mutual help and common confidence are wanting, and all these are the essential preliminaries and accompaniments of industrial enterprise and success. The position of the state towards its neighbours must be friendly, because international hate or distrust blind rival nations to their common interests. National hatred we know to have been in the past one of the greatest barriers to economic progress. The arrangement of tariffs is a matter of national policy too often dictated or largely coloured by the national prejudices and distastes. In modern times it is not so much the rivalries of governments as the hatreds and prejudices of the peoples themselves that are dangerous. Look how one or two political incidents impaired the economic interests of France and Britain during the last Paris exposition.

As business is carried on by the initiative of individuals, any existing prejudices or antipathies between people and people leads to the absence of all business relations between them other than those imposed upon them by natural necessities. In social life we are bound to have some intercourse with our neighbours. But if we regard our neighbours as always strangers or possible enemies that intercourse is the irreducible minimum. With friends, on the other hand, we cultivate the utmost degree of intimacy consistent with the social proprieties. So with the economic relations of people. When respect, admiration or sympathy exist between them, their business relations are the most numerous and close that opportunity can afford or ingenuity suggest. Amid conditions of jealousy or ill-will their relations are the irreducible minimum.

The size of these national aggregations seem important from the economic point of view. It is evident that the fewer the number of states the fewer the causes of friction and difference. The limits of free communication and intercourse are extended. The proportionate cost of maintenance of the state is largely reduced. We cannot shut our eyes to the beneficial effect of the union of all the old Italian states under one flag, or the economic progress of Germany, her growth in wealth and in volume of trade, since the accomplishment of the unity of the Empire. It is the same all over the world. Consolidation under one flag has immensely benefited both Egypt and India. On the other hand, look at the social chaos and economic ruin amid the numerous small republics of South and Central America. Chile is the only exception, and that country has come successfully through a policy of annexations and absorptions of her nearer small neighbours.

The stability of these national organisations is also very important. There can be no permanent industrial progress amid revolutions and political change. Witness modern France, Spain and South America. To secure this enduring stability political divisions should

proceed on natural lines. Artificial arrangements are seldom permanent. A nation should have as its foundational *raison d'être* some natural fact or natural foundation. The great physical features of the world present the natural boundaries of states. Racial descent is also a natural and very powerful tie. National unity and stability must follow natural lines.

When we view these organisations which have a political basis, we recognise that by legislation many economic evils or barriers to economic progress can be modified or removed. But there are other syntheses of humanity which exist apart from political forms, and which profoundly affect the economic condition of the world, and which cannot be influenced by legislation—those of race. We have seen that the character of the wants and desires of a people are economically foundational. These desires are also racially characteristic. But so also is the power or means of their gratification. Economically some races are more efficient than others. They present specific industrial features. For instance, the aptitude of the Jews for finance is notorious. It is a matter of history, and is as much a matter of observation now as in any of the preceding centuries. So also is the distaste of the Jew for agriculture or any form of naval service. The predilection and the capacity of the French people for the industries pertaining to art and fashion is noticeable. More important is the capacity for hard and prolonged exertion, and the endurances of privation manifested by some races. The Chinese, for example, can work from day to day for longer hours, under greater physical strain and with less food and poorer shelter, than any other race in the world. There are 400 millions of them. Some races are naturally simple livers, individually easily sustained, such as the Hindoos. Some races toil with slow pertinacity, as the Serbs. Others like to rush their work, as the English and Americans. These matters are of first economic importance. For instance, if the standard of living was raised throughout Asia a penny a day, not an impossible contingency, indeed,

a matter of certainty in the near future, it would add 1500 millions a year to the trade of the world. But what of their economic rivalry? What would so profoundly affect the condition of the world as the spreading of the great yellow race over all the sparsely-populated places of the world, with their never-tiring industry and their abstemious habits of living? They are courageous, independent men. It would be rash to say that the world has witnessed the final adjustment of its economic hierarchy. There is nothing like viewing unpleasant facts or contingencies fairly in the face. What policy should we adopt from an economic point of view in respect to these racial questions? We should say do as we have always done, afford them a fair field if no favour. The most important economic contingency of our time is whether the Chinese race can blend with our European races without losing in the contact our distinctively European qualities. But whether or not, we have perfect confidence in the highest European type (Teutonic and Anglo-Saxon) maintaining their long-tried superiority, or yielding only to a race superior to themselves, a contingency viewing the interests of mankind at large, not to be feared but devoutly to be hoped for.

These considerations bring us to the distribution of population over the world's surface. The plain economic duty is the covering of every acre of the earth's surface with a race of efficient workers. We have no sympathy with the maintenance of economic preserves, the world at large peopled by inefficiency, directed, if not governed, from one or two economic centres. We require all the unpopulated places of the earth filled up with teeming millions. In particular, we require a race economically efficient, capable of living and working with ease and comfort to themselves under tropical and sub-tropical climatic conditions. We know the European cannot labour continuously and effectively under or near the Equator. We must either elevate the negro or transplant another race to his present habitat. In crowded Asia, China

and Hindostan, we seem to have material furnishing some of those conditions. We should say it was of the first economic importance to transpose Chinese and Indian labour to these vacant sites. The Chinese, in particular, present from the world's point of view unique advantages, or at least special qualifications, as settlers in equatorial regions. As to temperate or approaching temperate conditions of climate, we have still the old resource of European emigration. The population of Europe, despite the drain upon its population by North and South America, South Africa and Australia, has increased during the nineteenth century from 170 to 500 millions. That proves that the inborn vitality—the *supra* energy above static requirement of the European races is still unimpaired. The voluntary emigration of the best European blood to places where their energies will be more fully remunerated, we believe, will not slacken, on the contrary increase. That course, however, cannot but in the long run materially affect the economic superiority now enjoyed by Europe. This danger of deterioration can be easily checked. To counteract the voluntary outflow of our best blood we must compulsorily transfer our social and economic failures. There are millions wrecking their lives and injuring their country's future status because they cannot fall on a means of honest work. Others because they are not suited to the complex conditions of an old historic civilisation. Others have wrecked their credit, which, once broken, can never be restored in the same economic environment. Large numbers have lost their moral status, and, having broken the laws of their country, must live in their own country with the taint and barrier of criminality always around them. These four classes require the attention of the state. To retain them in their own country is to wrong the unfortunate individuals themselves, and to injure the community among whom they live. Transference to a new sphere and employment in the elemental work of society, the reclamation and tilling of the soil, cultivates the moral elements lying at the base of civilisation.

All the race has passed through this elemental stage. When individuals lapse or have never fallen into line with complex civilisation the remedy is to transport them to simpler, earlier conditions of civilisation. Nature abhors a vacuum. We do not know anything about that, but we know Nature abhors a gap in her synthesis. She hates patchwork. A ruined or impaired economic unit has to be rebuilt from the foundation. View the facts. Siberia, Australia and America have received large drafts of our criminal elements. And what is the testimony of fact as to the result? When they have attached themselves to the soil their children have recovered the moral and economic points the parents had lost, and the grandchildren have taken their place among the proudest and most honourable sons of their adopted country. Thus compulsory or assisted emigration is not only a boon to the older civilisation, removing a threatening danger from among them, but it is a boon obtained without injuring the future status of newer countries, and is an inestimable blessing to the unfortunate failures themselves. True economic policy thus looks forward to, and endeavours to realise, a world filled to overflowing from pole to pole with active, energetic and happy workers.

After man the world itself is the next great factor in the production and acquisition of wealth. From an industrial point of view, and viewing the world simply as a field for economic activity, what is the most important relation subsisting between man and his habitat? Obviously the place and circumstances in which he can work for the longest period of time under conditions of least privation or discomfort to himself.

If we take labour performed from day to day and from year to year, it is of the utmost importance that the continuity of that labour should not be interrupted, and still less suspended, by reason of natural causes. Yet we know that arduous and outdoor labour is suspended in many countries, either from excessive heat or undue cold. In countries under Arctic or sub-Arctic conditions farming and outdoor work is suspended

for five or even six months in the year. Such a circumstance is an immense drain upon the time, energy and wealth of a people. Supplies and reserves of food have to be provided on a large scale for both man and beast. All organic forms eat more, have to be deeper clad and better housed than in more temperate climates. Besides, the interruption to steady labour has a very deteriorating effect on the worker, unless counteracted. Further south the summer heat is equally excessive, and also results in a similar suspension of arduous and outdoor work. There are more people killed by sunstroke in New York State in summer than are frozen to death in the winter. The numbers of both are considerable. It is impossible to suppose in such a climate that there is not a large economic loss through the suspension or slackening of active and arduous labour. All Continental areas suffer from the extremes of heat in summer and of cold in winter. Their elevation and distance from the ameliorating effects of the ocean is the cause. Central Europe, Russia, Siberia and Northern Asia will, under every condition of possible economic amelioration, suffer from these causes, compared with more temperate climates, where labour is possible all the year round, or, as in this country, on an average of eleven months in the year. Six months or at most eight is the length of the economic year for the largest portion of the Continental areas of the world. In tropical climates the great drought and rains and heats are also causes leading to a suspension or curtailment or slackening of labour. Europeans and Americans have to remove to the hills or cross the seas regularly to escape these trying conditions, to maintain their health and recuperate their energies. These journeys are expensive and a great waste of economic time. In all warm climates, or under intense sun's heat, labour is exhausting, and conducted under real conditions of discomfort and trial. The disinclination to work or the constant longing for rest and relief from toil are always present to damp energy and enterprise. Exertion is not

voluntary but assumed under a sense of duty or the pressure of necessity. The habitual attitude of mind toward work is a very important matter. These populations lack the joy, the physical exhilaration of work in temperate climates. The weakness of old age creeps sooner over them. Thus we may say that the number of working hours possible in a year in any geographical distribution of the population is a matter of essential economic importance, that it is not such a common condition as at first sight might appear, and that it is a relation of such permanency as to outweigh nearly all other economic advantages whatever.

After the length of the industrial working year the distribution of the population over the most naturally advantageous conditions would seem to be the next thing of importance. The occupation of the richest lands, the healthiest climates, the best fisheries, the command of the great trading routes by land, river and sea, are all matters of economic advantage. These form the nucleus and ultimate centres of the universal of industry, upon which concentrate and from which radiate all the forms of industry and commerce possible to their respective regions. These economic advantages are more potent, more permanent, than the possession of mineral advantages and forest or other forms of natural wealth, because, while mineral advantages may be exhausted or suspended as long as the world itself lasts, the advantages of geographical position and climate must always remain.

Still, we must not depreciate the advantages of natural agents and the natural materials of industry. We are extending the elements of particularity, but it is particularity on such a gigantic scale that, in relation to practical industry, it is of the nature of generality and, indeed, of industrial notionality. The possession of coal, iron, copper, tin, salt, lime, gold and silver within the national synthesis are great aids to the production and accumulation of wealth. So also are forests, rivers and fisheries. Proximity to the sea gives access to distant markets and the command of ocean-borne commerce. To illustrate

in the experience of individual nations the wider experience of the world, we may point out that industries of particular districts have had their origin in proximity to plentiful water power, or water of a particular character. Witness the old cotton and woollen mills of Lancashire and Yorkshire, or the brewing interest of Burton-on-Trent. Proximity to the sea to discharge waste and offensive products has built a town as well as an industry. The natural moisture of the climate of the north-west of England is found to be the secret of the superiority of English-spun cotton goods over those of the rest of the world. It is still less necessary to point out the advantages of contiguity to natural agents and markets. They save time and cost of conveyance. If coal and metal ores are found widely sundered, the cost of transport to the scene of their common individual treatment is a serious deduction from their intrinsic value. The more numerous and varied their potential sources of wealth the more favourably placed is that nation in the economic battle. It starts at a great advantage over less favoured rivals. An ideal collective productive unit would have a supply of every important natural agent within its boundaries, or at least within its convenient reach.

If there is a modern movement in relation to these primary natural agents or materials it is that the individual importance of these individual factors has been lessened, while their collective usefulness has increased. It is like the world movement, where the individual is every day becoming of less and less individual importance, while collective humanity is becoming greater and greater, stronger and stronger. Thus iron is becoming every day more interchangeable with timber, and, indeed, is displacing it altogether. Witness the change from the timber-built to the iron-built ships. Water is supplying electric energy at the expense of coal. Then amalgams are found more useful than simple metals. Thoughts like these should make us chary of acting or legislating upon the assumption that any one natural agent will for ever maintain its

supremacy or necessity. We might take, for instance, such an apparently essential productive agent as coal. We have much speculation, and even legislation, upon the hypothesis of its proximate or ultimate exhaustion. It seems to us that a mineral, of which upon the average not less than 50 per cent., and sometimes as much as 80 and 90³per cent., is wasted by one idea might stand in a different timeous relation so far as exhaustion is concerned, and that idea might come to-morrow or the day after. But we think it much more likely that we should have a new and auxiliary source of cheap heat. Already electricity generated by water power is a heat producer. Chemical combinations give off heat. Lime is a source of heat. So also are the sun's rays and electricity under natural conditions. He would be a bold man or a dull man that would deny the possibility of the supercession or the entry into rivalry with coal of another natural agent as a producer of heat. Even at the present moment we believe all forms of food could be cooked and houses warmed by the use of, or the decomposition of, lime. But, anyway, we look forward with confident anticipation to a new heating agent.

But even the world itself, our physical environment, is not such an adamantine factor in man's life as our ancestors, and indeed we ourselves, are inclined to suppose. It is a patent fact that the economic environment, that the world as a field of economic activity, and the world as the result of economic activity, is slowly but surely changing from age to age. We believe the soil is richer, yields more per acre than it did a hundred years ago. We believe the world has become a more suitable place for man to inhabit. It is drier, healthier, more accessible and more convenient as a place of abode. But these are minor changes always transparent to the observation of the locality and age. What we have still to realise is man's command over what has been hitherto regarded as unchangeable natural conditions. We will first state the case of unfavourable and disastrous change, because it will be admitted that if human effort can destroy, it is highly probable that

human effort can restore again. For instance, what is so associated with our ideas of permanency and immutability as climate and weather? Yet we know that climate has been profoundly affected by such events as deforestation. Deforestation has changed a damp, equable and prolific climate to one dry, variable and subject to the extremes of heat by day and colds and frost at night, and with summers of intense heat and winters of intense cold. Just note that the stripping of the plains and mountains of timber has reduced vast districts in Europe, in Africa and in Asia from fertile regions supporting large, and in many cases vast, populations to the condition of arid waterless deserts, where a few nomadic tribes can hardly subsist. Yet he would be a bold man who would assert that these depleted mountains could not again be clothed with wood and these plains again covered by verdure. Take a favourable instance. We know that arterial drainage and judicious reduction of timber has made many districts drier, warmer, healthier, more fertile and not nearly so cold in winter. We know that in Egypt and in India the effects of irrigation and planting has not only made a former desert fertile, but has perceptibly modified the climate, the temperature, the rainfall and, what is very wonderful, the force and direction of the winds. Here then we note a profound change between the race at large and the world at large. Hitherto the adaptability has been on the part of man. He had to adjust his organism, his interests and his habits to the major factors, to the forms and conditions of the physical environment of the world at large. Now he adjusts, or is within sight of adjusting, or he now realises his capacity to adjust, modify and govern the greater forces of nature which had appeared to him hitherto as nature unchangeable and inexorable. The great arid plains of Asia and Africa can be reafforested. The present vast tropical forests of Africa and America, the valleys of the Congo and the Zambesi, the Amazon and Orinoco, will be reduced and cut down on scientific arrangements. Our hot-beds of

malarial disease, the swamps and deltas of the Tropics, will be drained, dried, aerated and made healthy and fertile on large plans of national and world-wide policy. The rush and overflow of our great rivers, the Brahmapootra, the Indus and the Hoang-Ho will be enclosed and controlled by profitable works governing their passage from their source to the sea.

For the execution of great undertakings, great economic units are required. There is work in the world that will require a united world to accomplish. We have relied hitherto, and relied successfully, upon individual and voluntary associated efforts to do all our economic work. Certainly we would never think of doing through the state what could be done as well by the individual and the voluntary association. But we cannot conceal from ourselves that there is work in the world in the near future, which can only be planned, directed and financed by powerful national agencies, by powerful and wealthy governments. Nay, more, there is work before us only possible to a union of several governments voluntarily sharing the labour, cost and profit. It may be said, surely that is a remote contingency, a council of the distant future. On the contrary, we assert it is within measurable distance. Within a century we will be within sight of the necessity of dealing with such problems as the valleys of the Amazon and the Congo. Europe within a century has tripled its population. If you count the devastating wars at the beginning of the last century, and the vast tide of emigration since, we believe that the rate of increase of this century, 1900-2000, will be quadruple. That means that the population of the world on the same basis of calculation as we have adopted for Europe, and we see no reasons to make it any less at least, will amount in the year 2000 to 8000 millions of human beings. Unrestricted population doubles itself every twenty-five years. It is time, therefore, the public mind was being familiarised with the physical problems before it; that the respective fields of operation, their extent and character, were being mapped out. Our

learned societies cannot too soon begin to discuss these problems. It takes a long time to educate public opinion to new ideas and new policies. We want the public mind to be satisfied of the necessity, the magnitude, the possibility, the profit and the advantages of these real cosmopolitan tasks. Besides, it will take years to accumulate the requisite data, and* decades to conduct the required experiments and continue to carry these projects through. We like to hold up such conceptions before the industrial mind. Such potentialities and undertakings are the poetry and drama of industry. They help to elevate the industrial ideal, and modify our individual narrowness and selfishness. A great cause draws to it great minds.

We have just come across the following useful paragraph in a work entitled *Travels in Tartary, Thibet and China During the Years 1844-1856*, by M. Huc, Chap. XI. page 256:—"The excessive cold which prevails in Mongolia may be attributed to three causes—to the great elevation of the country; to the nitrous substances with which it is strongly impregnated; and to the almost entire absence of cultivation. In the places which the Chinese have cultivated the temperature has risen in a remarkable degree; the heat goes on increasing, so to speak, from year to year, as cultivation advances; so that particular grain crops, which at first would not grow at all, because of the cold, now ripen with wonderful success." The same fact of progress has been noticed as to the rainfall and natural fertility of the soil. Who can doubt the many physical problems man will successfully solve in the future?

CHAPTER V

THE OBJECTS OF INDUSTRY

WE have described in a general and tentative way economics as the science of human subsistence, and industrialism as the art of its supply. Industry is the process of labour or work by which to effect or secure certain ends. Now what do industrialists work for, what do they seek to achieve? To be practical, to be the life purpose of the mass of humanity, industry must seek the realisation of a transparent purpose. That purpose is generally described as the production of wealth. It is not the only purpose. There is the distribution, the accumulation, the retention, and the consumption of that wealth involved as well. Still, the initiatory idea or primary idea is the production of wealth. What do we mean by wealth? Before that question can be answered we have to put another. Can mankind immediately proceed to the production of wealth? May there not be an antecedent condition necessary to the successful initiation of the wealth-producing process? That seems the first matter of inquiry.

Industrialists must recognise as their first economic opinion that the bounty of nature, as it is generally called, is a figment of the imagination. However generous the rewards of industry may be, they are not a gift from nature, but they are wrung from her by the sweat of the workers' brow. There are no natural conditions above that of the hunter and fisher, where unassisted nature supplies the conditions of favourable, or even tolerable, subsistence. Take agriculture, for instance. You must clear the land of its natural vege-

table forms, its heathers, natural grasses and noxious weeds before the farmer can grow a crop. You have to remove the stones before you can plough, and the surplus moisture before you can reap. If you only ploughed and sowed without harrowing and cleaning, you would not reap a bushel of corn per acre. All cultivated land is in a state of normal return to a wild and barren state, which only constant vigilance and effort can retain in the services of humanity. Why, the very browsing of cattle and sheep means the depletion of the succulent and nutritious grasses, while leaving the bitter, non-nutritious and noxious plants to grow and spread. The thistles, the ferns, the bog myrtle, and all the hundreds of useless plants therein grow from year to year, until the farmer, to secure a cow's grazing, has to turn the land over again and clean it. Not only vegetable forms harass the farmer, but organic forms as well. Microbic and insect grubs peril the rewards of the agriculturists. The rabbit and the crow, the weasel and the sparrow, if not continuously kept down, would eat the farmer out of his homestead. Let a person leave his neat, well-trimmed, and prolific garden for a couple of years, let him shut his house and go for a two years' trip round the world, and what does he see when he comes back? His garden with every trace of cultivation gone, his garden walls being actually toppled over by the growth of wild plants and bushes; nay more, his house rotting before his eyes, the wood decaying, and the plaster falling. All that in a couple of years' time. We have seen such cases. Such facts show the arduous character of the war which we unconsciously carry on to retain the conditions which are necessary as a preliminary to the production of wealth. We have no figures to represent the cost of this preliminary to production, but the sums involved must be immense. All man's productions have a tendency, less or more strongly marked, to lose the forms given them or impressed upon them by man, and return to the forms and conditions of nature from which they were originally rescued. We believe if by some cataclysm of nature the whole human

race suddenly perished, an angel from heaven visiting this earth twenty-five years afterwards would fail to observe evidence of the previous human occupation of the world.

We return then to the idea of the production or acquisition of wealth. We have again to ask what do we mean by wealth? Who are we to apply to for its meaning? There are three possible sources of information—economic writers, the world at large or public opinion, and industrialists themselves. There is a difference of opinion among these. Industrialists say we work and sell to acquire money. The general body of the people regard wealth as synonymous with money. Economists say money is not wealth, that money is only a measure of value, that wealth “is all useful and agreeable things except those which can be obtained in the quantity desired without labour or sacrifice.” The position of our scientific economists is that practical industrialists do not know what it is they seek to acquire. We would traverse that position. Industrialists do know what they work for. They say they work to acquire wealth, and that wealth appears to their mind in the form of money, and we believe them. If you ask them why they work for money, they say that money enables them to supply their wants, that money gives them the command of the markets of the world, that with an adequate supply of money you can purchase where you will and when you will, or not purchase at all, but simply hoard for some future or contingent purpose.

If, then, industrialists labour to acquire money where-with they may satisfy their wants and desires, the next step is to acquire a notion of what these wants and desires are, and what they involve. And we must first point out what an immense range of potential satisfactions is furnished by the world's industry. The aim of some is a bare subsistence, the simplest and cheapest forms of food, clothing, housing and heating. The ambitions of others are of wealth counted by millions, and affecting or controlling the world of commerce and

finance. Between these two extremes there are an infinitude of wants, advantages and desires ever seeking satisfaction. To have an intelligent grasp of what is one of the primary conceptions of the movement we must descend to a fuller description. We have no intention, however, to encumber ourselves with a load of particulars calculated to obscure the progress of our exposition. If we endeavour to distinguish seven groups or classes of economic motivation, and therefore seven standards or forms of wealth, it will be admitted we have not unduly burdened the memory and attention of our readers. We divide wealth into—(1) necessities, (2) wants, (3) comforts, (4) advantages, (5) desires, (6) luxuries, (7) purposes. The broad distinctions between these classifications are apparent to everyone. There are large masses struggling for a bare subsistence, and to whom stoppage of work for the shortest period of time means privation. Next is the class who labour for the adequate supply of their wants. They are satisfied with a full meal of plain food. The class above them want a better class of food and a more comfortable home. Among this class the domestic servant appears for the first time. The wife does not do all the drudgery of the household. The class that labour for advantages have an ulterior economic purpose in view. They want to provide capital to begin or extend business, to provide for a restful old age, or provide for their children's future. The class that labour for the satisfaction of desires are those with a desire for culture, a taste for art, a love of pleasant social intercourse and of the amenities of society. The classes of luxury use wealth to mark themselves off from the common herd. It is something like the patent of nobility or the possession of a star or order. It is the product of the sense of personal importance, of ambition, and the desire to lord over as many of your fellow-creatures as you can. The last class is that of purpose, generally high purpose, those who amass large capital under a sense of duty to the world, to promote the well-being of their fellows, or to realise policies or measures they believe to be

in the world's interest. We have many citizens who labour for ulterior public purposes, many more than we think. There are many Peabodys, Bairds, Carnegies and Rhodes among us, though on a humbler scale. There have always been such in the world's history, but they are more numerous now than ever, and, as we believe, will grow in number as the ages lengthen.

The classification of economic wants and desires has given us as well a classification of the population according to their industrial motivisation. That classification also contains, *implicit*, a division of economic society according to income or power to purchase. The first class embraces those under the pressure of economic necessity, and they may be represented as all those whose wages are 20s. a week and under. Class II. represents the class of fully supplied wants, that of the great body of artisans whose wages range from 20s. to 50s. per week. Class III. represents the higher skill and supervision of industry and small masters who have entered the condition of comfort whose earnings range from 50s. to £6 per week. Class IV. covers the class enjoying the position of economic advantage. They have an income above their actual necessities to dispose of on grounds of policy. They may be said to range from an income of £300 to £1000 a year. Class V., those of classes we would represent as those with from £1000 to £5000 a year. Class VI. is but an exaggeration of Class V. with no limit to their income or expenditure. Class VII. is not distinguished by greater wealth so much as by the purposes they apply that wealth to, greater industrial development or greater service of humanity.

That classification is also a measure of economic power. That there is any difference in individual earnings arises from the fact that there is a corresponding difference in industrial power and capacity. In business there is no royal road to wealth. You cannot acquire wealth by favour. Even the fact that large classes live by the mal-appropriation of the

honest earnings of the workers of the world does not traverse this statement, because the dishonest appropriation of other's labours is not industry, it is robbery, a very different thing. You may take it then that individuals receiving 20s. a week or £20,000 a year are, as a rule, paid according to their economic capacity and services. If an individual has remained in a condition of simple comfort and has not risen to the position of Class V., it is because he has not the requisite ability or has not exercised due prescient sacrifice.

That classification is the foundation of economic and social collective units or syntheses. Industrialism analysed is at bottom a movement of masses animated by common interests and opinions, and attaining their ends by class solidarity, either conscious or unconscious, generally unconscious. Individuals possessing the same income, the same conditions, the same capacity, have generally the same class of work, the same habits, reside in the same localities, have the same education, tastes and amusements, and mix with each other constantly in every-day intercourse. They then form economic syntheses which are not the less real and powerful because they have no external and formal organisation, and no extraneous recognition.

Then there is an interdependence in numbers. The most numerous class is Class I. The class of fewest numbers is Class VII. Between these two extremes as the class rises in income it diminishes in numbers. At the same time we notice the numbers of the persons engaged in the production of these different classes of wealth bear also a corresponding interdependence, the largest number of persons being employed in supplying the elementary necessities. Neither may the numbers of these respective classes become disproportioned. We cannot but think if our government supplied us with a yearly return of the personal incomes of the population and their relative numbers from these materials one could form an accurate estimate of the economic power of the country from year to year. The income of the people is a sure index of their personal

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economic power in the markets of the world, their respective numbers a sure multiple of the economic power of each successive class. The smallest change in the growth or decadence of any one class is a corresponding indication of a change in the relative importance of that class towards the rest of the nation, and of the nation to the rest of the world.

The classificatory arrangement we have presented is not arbitrary. It represents a real succession and graduation. The industrial hierarchy is a reality, all ranks of which must rise or must have risen from its groundwork in the possession of the necessities and wants of life before they rose to business and high purpose. Nay more, in a perfect economic synthesis, which just now is the national synthesis, all these forms of the industrial hierarchy must be represented. The absence of an industrial class hinders the perfect, easy and natural ascent from the lowest to the highest industrial position. On the other hand it is nature's law that those who have ascended and who have lost the capacity that determined their ascent, or those static conditions that if undisturbed would have preserved them in the position to which they had attained, must pass, and in a healthy community do pass, into a lower social status, a status which is always determined in the long run by certain industrial or economic conditions. If wealth is a coherently graduated ascent it is also a graduated imperceptible fall, an easy and natural return to earlier conditions, amid which, by a new co-ordination, an individual may achieve a new ascent. Briefly, in a perfect industrial synthesis much opportunity is given to rise, while the fall of the social failures, which are always the world's gravest dangers, is provided for and softened.

But we think we can best prove the necessity of this industrial hierarchy or gradation by a reference to the recognised industrial facts of the age. We find among nations those with a perfect industrial synthesis are the most prosperous. Those nations with an imperfect industrial synthesis are behind in the race of industry

and civilisation. We find Germany, America and Britain have a perfect industrial ascent. We find Ireland and Russia have no adequate middle class. That hiatus is the cause of their industrial failure. Their industrial synthesis is broken. There is an unbridged gap in their economic conditions which reveals itself in social war and hatred. If you think of it, it is not only the economic gap, but the social gap that it creates, that is the danger. The middle class have their special experiences, reading, judgment and tastes, which greatly assist them to form true opinions of the humbler class they are leaving and the higher class they aspire to enter into.

Again the consumption of needs and wants is strictly limited. An individual can only consume a limited quantity of food, drink and clothing. If he exceeds in any of these requirements, nature steps in and punishes his indiscretion. On the other hand, the wasteful consumption of superfluities and luxuries is practically unlimited. The potential expenditure on rare foods, unique wines, elaborate silks and costly velvets, upon forms of fine art in furniture, pictures, music, and the like, is limitless.

Another distinction amid the elements of our classification is that when a scarcity of any of the necessities of consumption unfortunately arises the price of these essentials rise, while the price of all non-essentials falls. On the other hand, a rise in price, consequent upon a scarcity of non-essentials, is not followed by a fall in the price of essentials. In Indian famines, as in all famines and periods of scarcity, the natives are observed to part with their superfluities first, as indeed common sense would lead us to expect. We remember a somewhat similar course of proceeding in Britain during the time of the cotton famine during the period of the American civil war.

There exists a great difference in the permanence, the stability of these forms of wealth. The common needs are the most permanent, the comforts and advantages next, while desires and luxuries manifest a

large element of variation. Indeed, this permanence in the means of satisfaction associated with the great needs of mankind is very striking. We find the grains of wheat in the Egyptian sarcophagi, the same in form and character as that sown in our English counties to-day. The rice of India and China has been the staple form of the food of the people since the dawn of history. The potato is the only introduction of an elementary food substance into Europe that we remember of, and it came from undiscovered America, where it had existed as a staple article of food as long as wheat in Europe and rice in Asia. Advantages show occasional changes in form, desires and luxuries in their very nature presuppose novelty and variation. Many of the changes of fashion, indeed all the changes of fashion, have no intrinsic *raison d'être* but to appear to-day different from what we were yesterday and will be again to-morrow.

The whole fabric of wealth resembles a classificatory group in the organic world. The main characters of the group are everywhere the same. The latest developments are among the most variable and least important parts of their structure or covering. There is also the further parallelism of constant competition in the discovery and presentation of new superficial forms.

We have then presented a description of the objects and interests mankind ordinarily labours for, and which are in common conversation described as wealth. We require, however, a brief formula to present in a single word or short phrase the idea we have described at length. Viewing wealth in the mass, we observe of its various forms that they are useful, transferable and valued in terms of specific price. They are useful, or they would not be laboured for; they are transferable, otherwise they could not pass from the possession of the producer himself, and could be the subject of neither purchase nor sale; and their value is measured, otherwise there would be no regulated transfer. We have then the three conceptions of usefulness, transfer and measure to reduce to an expressive verbalism. Usefulness is utility. Transference is a redundancy, because it is

implicated in measure. We only measure in price what we need or want to exchange. We are reduced then to the two ideas of utility and measure. But the measure of economic value is that of price. We want then a term to describe price. We find it in the word appraisement. If then we adopt as our ultimate definition of wealth the short phrase "appraised utilities" we have found very nearly what we want.

Still, we are not satisfied that we have exhausted the conception of what useful and agreeable things mankind is content to labour for. It is true that things useful or agreeable, transferable and capable of being measured in terms of specific value, are wealth, but does it follow that there are no other forms of useful and agreeable things which we must and do regard in the light of wealth and which are excluded by the term of our definition? While all within the term "appraised utilities" are admittedly wealth, it does not follow that our term embraces all forms of wealth, or that we are justified in saying whatever is not an "appraised utility" is not wealth. On the surface of our definition we observe an inadequacy. Because the useful and agreeable things we have spoken of are those things useful and agreeable to individuals, they are things acquired by individuals for individual purposes, they are transferred from individual to individual, and they are appraised in terms of value as between one individual and another. There runs throughout the whole conception a personal, an individual foundation. We cannot but think such a limited conception is not now truly representative of all the facts of the economic situation. In modern society there is a great growth of collective purpose, interest and endeavour. The state has become more to us, we make it do more for us and we contribute more to it than our ancestors did. These circumstances are in brief that the state, in certain aspects, is useful and agreeable to us, that we are willing to pay for these benefits and advantages and that we are satisfied that we get value for our money. Or we will put it another way. We want certain collectively useful or agreeable

things which we enjoy in common, which we can only secure by the aid of the widest social unit (the state), and which we have to purchase by means of taxation on lines of national adjustment. Do not think we are confounding industry with economics or economics with sociology. We say that industrial interests and industrial wealth have in the present day assumed, in certain phases, a collective and national aspect, that we no longer rely upon exclusively individual effort, that in certain industrial contingencies we are absolutely dependent on the state. We must recognise that industry has now a collective as well as an individual side.

We classified wealth from the individual standpoint under seven heads. Suppose, to put our present contention fairly before our readers, we adopt the same number and the same principles of classification of collective wealth or associated wealth. We have (1) collective necessities in the defence of the industrial community by the sovereign power. (2) As wants, only second in importance to protection from without, we require order and protection for property and its equitable adjustment within the state. (3) We have education to provide for, an industrial *sine quâ non* only second in importance to the existence of the state. (4) We require the state to collect and furnish us with statistics and industrial data and the means of communication which no form of individual effort could accomplish. (5) There are the amenities of public life in the forms of museums, parks, gardens, exhibitions and music, which not only satisfy the public sense of benevolence, but are also economic advantages. (6) The luxuries of private life have their counterpart in all that adds dignity and stateliness to the nation's public life. (7) There can be no doubt about the advantage of sound national economic policy and the ample return of all the capital we expend to secure it. It is the state alone which can establish and carry through a policy for the benefit of succeeding ages and for the advantage of the world at large. This growing altruistic and prescient position in relation to the world's industry is every year

of more importance. The necessity of more associative effort in the vast economic tasks lying before the world—tasks utterly beyond the capacity of any form of individual effort—are apparent even while we write. We are not advocates for any system of state socialism or state industrialism. We only plead for the application of collective effort where collectivism is necessary to secure the desired end. We are all for individualism where individualism is adequate to the occasion.

We see, then, there are forms of wealth, objects and services which only exist in or through the state, and to which our terms of definition formed to cover the phenomena of ordinary industry, which form of industry has always an individualistic foundation, do not precisely apply. We cannot individually determine, measure and appropriate national wealth. On the other hand, there is a general similarity between individual, corporate and national wealth. Thus useful and agreeable things, useful and agreeable results and services, are the result of labour, are paid out of the fruits of labour, and industry ultimately enjoys their advantages. What, then, is the difference between private and public wealth? It seems to arise from the gap between the two classes of phenomena, the desire and its satisfaction, the number of intermediate relations interposed between them, but which intermediary relations are not present to the mind, are not apparent to the individual industrialist. They are stripped of their personal relationship. We may illustrate this by a reference to the logical particular, concept and notion. The difference between the idea of particular, concept and notion is that of successive steps, but also successive staging. They are all generalisations, but successive generalisations, the last, the notion, containing at once more and less than the other two, but from our present illustrative point of view more. It is true the particular is notional, not less than the concept and the notion itself. But it is also true that the characterisation of "useful and agreeable" runs through the classification of individual, corporate and national wealth. The dif-

ference lies in the distance in logical sequence from the initiatory movement. Against these ideas we place for purposes of comparison individual wealth, corporate wealth and national wealth. In logic we can think of all our phenomena notionally, suppressing or overlooking the conceptual stages of generalisation by which we have ascended. So in the fact of collective wealth. The particulars and stages forming the means of the ascending phenomena are lost to view in the number, maze and merging of the processes. We only perceive them in their large general results, in the notionalty of the completed synthesis. For instance, an individual's contribution to the taxation of his country, which is the means of purchase and mode of payment for national benefits, is lost to his individual purview the moment it is paid into the hands of government. He cannot say how, or when, or where, or how much of his individual payment has gone to any particular state purpose. Neither can he specifically refer to any particular benefit from the state, and say I have received so many shillings and pence worth of advantage. He is satisfied with the general result, and has to be so. Thus the particularity, the specific and individual element, as well as the conceptuality, the composite form of wealth, disappears from view. National wealth has assumed a notional form. The desires are notional, the form of their satisfaction is notional, and so also is the instrument by which that satisfaction is reached, the state, the highest industrial unit, the notionalty of active industry.

We are not done yet with our conceptual idea. It is not particularity (which is the individualism of industrialism) on the one hand. Neither is it the notionalism of industrialism (which is the state) on the other. It is the phase of industry between these two extremes. It is the forms of industry which, viewed from the point of view of particularity, lose their concretion in a higher notion. On the other hand, viewing these industrial forms from the *point of view* of the higher notion, they assume an extension of

concretional form. We say this dual logical process is exhibited in all associated or corporate wealth. It is associative when viewed from the individual or particular side. We describe it as corporate when viewed from the notional or state side. Let us see what separates this concept from its two co-ordinations. As against the particular, it loses specific individualisation. A company, an association of individuals is formed, say a bank. It is formed of quite a number of individuals. It has a general purpose. It makes united profits. These profits when divided have no specific relationship, but only a general relationship, to the actual personal holding of the contributors. The collective character of the institution is its distinctive and conceptual feature. In other cases of associated industry, the conceptuality arises from the industrial purpose of the specific movement depending upon social states or collective wants, states or wants existing in virtue of this collectivity. For instance, the lighting of a town with gas is the satisfaction of a general need. It does not stand in the same particular relationship to the individual, either as to the want or its satisfaction, as for instance a person's bedroom candle. It is impossible to particularise it. It is a conceptual relation. So with tramways and suchlike undertakings. The existence of the industry depends on the conceptual relation of aggregation and contiguity of population. Such also is the wealth which arises from location, position in business centres or in certain thoroughfares. It is a general, a conceptual value—a value impossible to reduce to specific particulars. On the other hand, viewing corporate wealth as against the higher notion of the state, it is industry concreted. It is localised, restricted in extent, narrowed in purpose. It is a smaller interest than the nation. It requires less than a national effort and organisation for its satisfaction.

It would appear then that it is only to ordinary business, to the ordinary transactions of making and buying and selling that we can apply rigid terms of definition, and that we must recognise that when we

leave ordinary personal business for collective effort or collective wealth we have to apply our definition in a wide and elastic sense.

We have another observation to make concerning wealth. We are viewing industry not only as a movement but as a synthesis. That is, our purpose is less analytic than synthetic. What is the static position of wealth? We know the amount of wealth has risen from small beginnings to colossal proportions. It has often changed its character. In the past the wealth of ages has sometimes disappeared and sank for ever in the sands of time. We cannot therefore say that wealth, like matter and its inherent properties, is a fixity or a necessary permanent element in the world. This will appear if we reflect that a large part of wealth, and certainly all accumulated wealth, depends on psychological considerations, on acquired tastes, on acquired habits and on a slowly-acquired attitude of mind. It is well then that we should bestow a thought on the stability, the permanencies of the wealth conception, and the power of that conception to ever lead to wealth-production. We cannot conceal from ourselves that in the world of politics and industry to-day there are cults which seek to destroy wealth and others whose ideal is a common level of satisfied necessities.

Man is impelled to work by (1) natural necessities; (2) natural affection; (3) acquired tastes; (4) personal prudence; (5) desire for leisure and culture; (6) and from policy. As to the first, there is no doubt man must work to live. So long as man is as he is the first causation stands good. So also as to the second. We cannot disassociate the continuity of the race from natural affection. Parents will ever labour to provide for their offspring. But such extra personal exertion admits the principle of supra-exertion beyond the actual necessities of strict personal subsistence. Are acquired tastes (3) a less imperative call on man's energy? Every desire and form of pleasure requires effort for its gratification. The sight of a new object, the presentation of a new form of experience produces in the mind that curiosity

which seeks to acquire or enjoy. A taste once gratified seeks repetition, repetition becomes custom, and custom grows into necessity. A form of comfort or pleasure which at first was a matter of pure indifference ends by becoming a necessity, the absence of which causes a real sense of privation and even positive mental, or physical pain. There is no voluntary falling back in the experience of pleasure. You may override it by a higher motivisation or by other motivisation, but you cannot eradicate the memory and crave for the previous pleasurable experience. Thus we may say of the third contingency that it seems an incentive toward wealth as permanent as human desire for pleasure and enjoyment. Our fourth contingency involves a different motivisation. Can we say that personal prudence is a static influence in industry? Looking at the many gallant craft that have stranded or sank under the pressure of the storms of self-indulgence, we cannot speak with the same certainty as in the previous considerations. For observe the wealth accumulated by personal prudence, efforts for prudent future ends, is that labour persisted in after the satisfaction of the needs and necessities of current life. It is labour persisted in when you are already tired with the necessary exertion of sustaining life. The sense of exertion grows upon you with every hour of labour. It is the last hour or two of labour which you devote to supra-exertion, hours which are the most trying and exhausting of any. Then the results of this extra exertion you do not expend upon yourself. Money acquired by work and expended upon the worker seems like the law of gravitation and repulsion a process of natural equilibrium. But wealth acquired by one and spent by another, even though spent with the worker's consent, is a very different case. There must be ultra-personal motivisation. It is personal prudence based on unselfish considerations and requiring more than the ordinary personal exertions. It is thus by no means a matter of certainty that the production of wealth formed under considerations of personal prudence will always remain a static unchanged condition of industrial

society. The personally prudent class is not universal. Those who have visited other countries than their own, and even remote and obscure districts of their own country, are struck by the total lack of prudent thoughts among the general body of the poor and the general body of the aristocracy. We have known the lower classes squander pounds with a winter of famine staring them in the face. We have known gentry spend year after year three and four times their income, ay, even more, their eyes open to the ultimate consequences all the time. Still with all these damning facts before us we still believe in the static influence of personal prudence upon industrial effort. We cannot deny that the mental force behind personal prudence has produced all the vast fabric of civilisation. We should say that the consciousness of the power to spend and consume furnishes ample compensation to the producer for his extra exertions, and that as a further reward for his extra exertions the actual unspent pounds, shillings and pence remained to him. The only cases in industrial experience where this instinct of personal prudence as an agent in the production of wealth has been permanently destroyed, or temporarily suspended, are those cases where the unreasoning rapacity of the state ground down the people with labour and exactions until all sense of personal interest in wealth was destroyed and the people abandoned all voluntary exertion for wealth production, a wealth they could not enjoy or even participate in.

We mention as the fifth influence impelling men to acquire wealth, the desire for leisure and culture. This is a more direct appeal to man's selfish instincts than the last, and is therefore more likely to be a permanent and unbroken stimulus to labour than when the principle of sacrifice is so conspicuously present. We cannot deny, prosaic though it sounds, that the more closely the effort is bound up with the personality of the worker, the more certain the element of extension, continuity and permanence. What renders this form of stimulus to the acquisition of wealth important is not

so much the fact of the enlightened selfishness as the source of the selfishness. It is a desire for leisure and culture. The motivation therefore comes from circumstances outside of industry *per se*. Now all motivation which arises outside a specific movement, and which yet requires for its gratification the development or application of the characteristic principle of that movement, strengthens that movement *per se*. It is a double guarantee of stability, for it has the stability of the outside motivation, and the stability of the practical realisation inside the movement itself.

The last impelling motive to industry is policy. It is an extension of the principle of prudence. But it differs from prudence in that the sense of self-regarding interest as the motivation is weakened, indeed we may say transcended. It is altruistic, or as nearly altruistic as individuals engaged in the business of life are likely to aspire to. Your approach to it is from the higher side, the side that views the general interests of society as dominant over the personal interests of the individual. The type of character and ambition we have before our mind is those who view industry as a duty, as a career of practical usefulness, as a career capable of satisfying their conscience. What a disaster to humanity if the idea went abroad that the only form of the higher life consisted in abstract knowledge, in religious sentiment, in literature and the fine arts. In many cases, then, individuals have ulterior views of philanthropy and legislation. Still the agency by which they seek to effect these is a long spell of arduous labour. Many have an even more direct relation to industry. They see the world needs many times over its present capital, can support many times its present population. That should be the dominant thought of our time. That wealth is a duty to the individual, a growing necessity to the age. Besides, many industrialists perceive that there is no discipline equal to business for building up a sane mind in a healthy body. What is the reason all the best of America's sons devote themselves to wealth and not politics? Underlying all other reasons

it is that industry is the highest and most useful service to humanity. Humanity has suffered through religion, politics and legislation, but it has never other than benefited by honest industry. Now this altruistic impulse to industry is important in several ways. It is an impulse, from the outside. It is a great thing that industry should be not only in harmony, but also receive direct incitement from healthy and sane altruism. But more, there can be no doubt that wealth and industry having outlived the obloquy of religion was being anew perilled from the altruistic side. Many candid reformers and leaders in their philosophical endeavours to remedy the wrongs of society erroneously attributed these wrongs to wealth, the only means of conquering nature, and furnishing an adequate wage to our working population. In this mistaken hatred of wealth they have ever shown a purpose of returning to all the terrors and tyranny of the *corvée* and compulsory state labour as it exists in Tartary and China at the present day. In our country labour leaders and collectivists, if they have not gone so far yet, manifest a decided hostility to capital and wealth in the abstract, though showing a strong personal opinion as to the advantages of its individual possession. They have also adopted a fiscal policy of depleting the slowly made accumulations of the frugal, not only a personal injustice, but a disastrous economic mistake. It is therefore not without reason that we welcome a motivisation to productive energy from the altruistic side.

Viewing then the effectiveness and continuity of the motivisation leading to voluntary economic energy, we think them powerful enough and static enough to conserve the progress of the world in the direction of yet greater industrial success. Thus we have got rid of the second bugbear of the old economists. The first was the fear of the pressure of population on the means of subsistence, and the second that man should lose his personal inclination to acquire wealth.

CHAPTER VI

THE MECHANICAL SIDE OF INDUSTRY

INDUSTRY is the satisfaction of certain wants, the realisation of certain purposes. These all ultimately assume a material form, as they are also the result of certain material or natural processes. To understand industry we must present to the reader some mental picture or description of this mass of fact and process, that he may have some conception of the magnitude of the industrial movement. The primary work of industry is to supply the food, the water, the clothing, the warmth and the shelter of the race. That at first sight does not seem to be a great mechanical task. We see what we eat at breakfast, at dinner and at supper, and we know it is not much. Not much individually certainly, but there are 1,600,000,000 of persons embraced in our calculations, and it is surprising how small wants on such large figures mount up. It has been estimated that the average man consumes 2 lbs. weight of food every day. Now 2 lbs. of food per diem for 1,600,000,000 people reaches the immense mass of 500,000,000 tons per annum. We certainly cannot put the requirements of water at a less figure than 1 gallon a day per head. If you consider the water required for drinking purposes, for cooking and washing purposes, besides many other purposes, it is a very small allowance. Our municipal authorities supply 30 gallons per head per diem. Yet a gallon of water per head per day amounts in the year to 3,000,000,000 of tons. Then if you count the materials required for clothing and sheltering man, and for waste and loss, as the same in weight mass as his solid food, we have another 500,000,000 of tons to add. For these three

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limited purposes, for the barest needs of mankind, we have to move and handle this enormous tonnage yearly :—

Solid food	500,000,000 tons
Water and liquid food	3,000,000,000 „
Clothing and shelter .	500,000,000 „

4,000,000,000 tons annually.

Such is the extent of the imperative task laid on the shoulders of humanity. It has always surprised us that humanity did not envy the superior condition of the vegetable kingdom with no such responsibility attached.

Or take another illustration. The gross value of the external trade of the ten leading countries of the world last year amounted to £46,811,000,000.

Or take still another instance. The raising of minerals and metals is a very arduous work. It is no over-estimate which places the average depth from which these are raised to the surface as between 600 and 700 feet. The total weight of saleable minerals and metals raised from that depth was given last year at 720,565,000 tons. Besides that amount much waste material had also to be brought to the surface.

We will state one more fact. In the world there were last year 484,348 miles of railway open. Before these pages meet the eye of the public that mileage will have reached 500,000. The average cost of these railway lines will not be less than £3000 per mile. That represents an aggregate cost of £1,500,000,000 for railways alone.

These isolated figures will enable the reader to understand what a gigantic physical fact our industrial life is. It is the ever-present work, the constant call upon the energies of the race. It is presented to us in the whirl and maze of billions of human actions every day of life. To understand them and reduce them to order we must have some forms of classification. In fact, we will adopt several. Speaking generally, industrial operations mean the improvement of man's immediate physical environment ; or the transportation of himself to the most or a more favourable situation ;

or to the discovery, selection and transfer of useful things; or the manufacture by his own labour, or by the aid of machinery, the product of his own labour, of useful or desirable things. That is in itself a classification of economic ends.

When we survey these economic operations we perceive they are all the outcome of force, the product of economic energy; that is, energy applied to economic purposes. Economic energy is just human energy devoted to economic purposes through thought and action. Although man calls in to his assistance many other forms of mechanical power, their usefulness entirely depends upon his own will, intelligence and ingenuity in adapting them to his purpose. The primary conception then is that of force, power; power displayed in thought and action toward the attainment of certain ends. It is not an unchanging element. It has often varied in amount in human history. It has risen at some periods; it has declined at others. It is greater to-day than it ever was in the world's history. Most noticeable of all the amount of this force applied to economics, the amount of economic force, has still more frequently changed. We cannot deny that force applied to other human interests has often greatly exceeded in amount that applied to industry. War, religion, politics, and even art and science, have all at some period occupied a larger share of the interests and energies of the race than industry. Taking, then, energy applied to industry, it takes two forms, thought and action. In this chapter we are dealing with the physical side of our subject. We therefore drop out of notice, in the meantime, thought, and seek to survey economic action alone.

Economic action again may be viewed in a dual light. We can view man himself as an industrial engine or machine, and we can also survey the various forms of natural force which he has brought into his service. Let us see what can be said of man as a mere mechanical machine. From this point of view we mainly regard man as an animal and as a producer of animal force.

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The animal may be described as a mechanical engine, free, adaptive and locomotive, and energised by chemical combustion. He has a solid framework of bone, his skeleton, to which is attached the organs for decomposing and assimilating his food. His skeleton is formed of a great number of bones, all of which are more or less pliable in their setting of muscular tissue, and some of which supply him with the means of locomotion. Professor Balfour Stewart observes in his textbook on *Human Physiology*, it was a grand step in science which showed that just as the consumption of fuel is necessary to the working of a steam-engine or to the steady light of a candle, so the living engine requires food to supply its expenditure in the form of muscular work and animal heat. Ultimately, therefore, the energy of the animal is derived from the food which it eats, and if it works much, that is, if it expends a great deal of energy, it must eat more. In fact, food to the animal is what fuel is to the engine. It is the combustion of the food that supplies the frame with energy; and there is no food capable of nourishing our bodies which, if well dried, is not capable of being burned in the open air. The initial energy of the animal machine is, like the energy of the steam-engine, obtained from chemical combustion. His skeleton is just the engine framework. But the animal has the advantage over the engine of locomotion, of adaptability to more than one task. This variety of work, this capacity of adaptation to the million wants of life, is striking, and distinctive of man. Thus man stokes himself, repairs himself, and renews himself when worn out in his offspring. He can be fed, that is, fuelled, on the greatest variety of materials. He can live on grain, or fruit, or fish, or flesh without any alteration in his digestive apparatus. He can live in every climate, whereas other animals are localised. He can transfer himself to places where no other animals can. He can cross plains, ascend mountains, thread forests, cross rivers, and navigate seas. Then, instead of requiring four pedal supports, two suffice, and the other two are

used for holding and making things. Compare the forefeet of a horse or of the quadrumana with the hand of the bimana and of man himself. It is the change in the structure from the leg and foot to the arm and hand that enables the bimana to climb and hold. This holding power and the erect posture is man's secret of physical superiority. To these physical advantages he adds high skill and intelligence in his work. We do not refer to thought or his acquisition of formal knowledge, but to that attention, observation and tactual skill which, while far above that of the rest of the animal world, still does not partake of that higher intellectuality which comes to man on reflection upon accumulated human experience and the generalised facts of life. Thus viewing man as an economic operative unit, nowhere in nature is there such a compact, handy, adaptable and powerful force in such small bulk as in the case of man. Indeed, his small size is a feature worth pointing out. Yet though individually small his power of association and combination makes him a powerful collective force. To all these considerations we must point to man's vast numbers, 1,600,000,000, to grasp in thought what a stupendous force human industry is or human activity is.

But man has artificially increased the amount of energy at his command. It is stated on the authority of physists that there is now in the service of industry more energy outside of man than within him. For instance, that the steam-engine power of the world vastly exceeds the united working strength of the race. We believe it be true. That means that man has successfully drawn upon outside nature to contribute to his wants and increase the sum-total of economic energy. These sources of extraneous assistance are two. Man has made other organic forms bear a share of his burdens, and he has also made inorganic natural forces subservient to his will. Though in modern times the inorganic forces are the most important, the organic have still to be recognised. Of these the principal is our old friend and ally, the horse. Those that have

stood at the Monument and viewed the traffic over London Bridge, or have stood at the Mansion-House corner, will realise that the horse is still a powerful economic ally. The ox and the camel still do economic duty in other countries, so also do the elephant and llama. Even the carrier pigeon has become useful again, amid the developments of modern life. Still, viewed as a whole, we cannot say that organic energy can be compared for a moment in amount and usefulness with the inorganic forces that man has brought into his service.

These inorganic forces are of two kinds: motion and chemical change. Of the first the winds, the rivers and falls and the tides are the principal agents. None of these are adequately utilised. Indeed, in the case of the tides that form of power has scarcely been trenched upon. Yet looking at its mass and energy it is the great resource of the future. In our journeys through the West Highlands and Islands we have always been impressed with the immense force of transmissible power through the agency of electric cables running to waste, power sufficient to supply all Britain.

In modern times, however, the favourite agent is chemical decomposition or change, brought about generally by the combustion of coal or oil. This decomposition liberates a great deal of energy in the form of heat, which generates steam or gas, which is applied to the movement of certain objects. The intermediary is sometimes electricity. Electricity is not yet a source of power in itself. It is only a media of transmitting energy from its source to its object, like steam or gas. The advantage of electricity over the two latter is the distance the energy can be conveyed, through a small and convenient vehicle, from the source of the power to its applied object.

But the decomposition of coal and oil is not by any means the only source of chemical energy. They are only the most convenient, the least dangerous and, in the meantime, the cheapest. It is surprising the energy

obtained by the decomposition of the smallest amount of certain substances. Indeed, it is more than surprising, it is marvellous. Familiar instances are gunpowder, gun-cotton, dynamite, lignite, and cordite. A cartridge of gunpowder not the size of your little finger, exploded by concussion in the barrel of a rifle, will propel a bullet a distance of two miles certainly, perhaps three. Some of our heavy ordnance will propel a ball a half a ton weight ten or twelve miles. In the case of dynamite and other preparations of nitro-glycerine, we have substances of still greater expansive power. It is no uncommon thing for a rock-mass weighing a hundred thousand tons to be riven from a mountainside at one monster blast. A great economic future lies before this form of economic energy. It will in the near future, if it does not supersede steam, greatly compete with it. Comparing the amount of energy unloosed with the cost, it is immeasurably cheaper than steam. Its present inapplicability to industrial objects arises from its immense and sudden creation of energy. The first fact constitutes its superiority to all other forms of artificial energy. The second is capable of partial regulation now and should be capable of perfect regulation in the near future. Explosives having been first employed for destructive and warlike purposes has probably created a prejudice against their industrial use. But there they are, the greatest and cheapest form of artificial force known to science, awaiting the attention of the industrial engineer.

These forms of energy are directed to their purposes through machinery. The machine is a substitute for the organs, the arms and legs, of the human body. As compared with the human body, machinery lacks spontaneity and adaptability, but, on the other hand, it possesses advantages with which no human arrangements, industrial or collective, can compete. In the first place, through constructive contrivances power can be concentrated to achieve purposes that no combination of human energy in the same space could attain to. For instance, no amount or distribution of human

labour could propel the *Campania* or *Lucania* across the Atlantic. There would not be room for the people required on board, or for their food and water. Thus in a given space you can compress more operative power by machinery than by any arrangement of human labour. The machine has greater rigidity than the human frame, it has greater tensile and resisting strength. It has vastly greater precision. Indeed, the precision of mechanical agents is that of mathematical accuracy. Then machinery can be made to increase the power of a given measure of energy, though at the cost of time and speed. The block and tackle enables a person to raise a weight many times over his strength. It is true that ultimately he has expended just the required amount of energy as though he had lifted the weight at once, but it is equally true he could not have raised that weight at all without the multiple increase of strength given by the block and tackle. Machinery also gives a speed which the human agent cannot attain. Look at the speed attained by the wheels of an express engine. There is also practically no limit to the conjunction of number, variety and complexity of parts and tasks set to a machine. Witness the varied forms of power and complexity of arrangement in a cotton-spinning and weaving mill or carpet factory. Machinery is tireless. A pit engine once set in motion goes on day and night for years. It is non-volitional and passive. It always and instantaneously obeys, and never doubts or disputes. Neither does it skulk or linger. Its uniformity of motion or steadiness of action is also a distinctive feature.

Now the amount of this energy, of this dynamic economic power, natural and artificial, is the measure of the potential developments of the movement of industry. Industry in its results cannot exceed the limits of this initial economic force. On the other hand, industry can fall far short of this potentiality. The most perfect form of industrialism is that of the nearest approach to the exhaustion of this force; to its full utilisation, without waste and without unrecognised latency.

The next phase of our subject is the static element in economics. The dynamical side attracts most attention, it is most in evidence. But the static side is hardly less important. Through it the permanency of the movement is secured, and only through the static element is accumulation possible, accumulation not only of wealth but of those alterations and improvements in our environment which represent the physical side of civilisation. Even in such a dynamical force as a steam-engine the static element is largely represented. Without the silent static frame the steam-engine would be useless. The bed of a large stationary engine is as essential as the engine itself. Our roads and bridges, our railway lines and streets, are all static economic forms. Certain chemical combinations have for their objects and result the creation of static states of more or less permanence. Such forms of substances as iron and concrete have as the beginning and often as the end of their usefulness, this element of permanence. These static states are in either the inherent inertia of the substance, in the artificially-produced cohesion of matter, or in the artificial equilibrium of opposing forces.

There is another form of economic statics: the selection and cultivation of certain organic forms, such as wheat and rice, for their relative permanency. Wheat and rice, and corresponding forms retain their nutritive and economic value for several years, with care and skill. Then what is called canning or enclosing in hermetically-sealed vessels renders the most perishable forms of vegetables, fruits, fish and meat impervious to decay, or, in other words, transforms a temporary state into a relatively static one. So also does the system of cold storage or ice chambers preserve decaying forms for any required length of time. We have breakfasted in the Mersey on mutton and fresh herring which had been taken on board the steamer when she started on her voyage to the Pacific 105 days before, and we can testify to their soundness, indeed freshness. The importance of this preservation or static condition lies in

the fact that substance can now be carried long distances and through climates which before was impossible, that we can enjoy summer products all the year round, and that the redundancy of one year or several years need no longer be extravagantly squandered, but can be set aside to await the certainly following lean year or years.

Another clearly-defined class of physical operation is that of the reduction of friction or resistance and its correlative the accentuation of resistance. The reduction of resistance is the *raison d'être* of our canal system or water carriage, of our steel railroads, of the form of the steamship, of lubricating oils and substances and a thousand other contrivances. On the other hand, the brake, the warp and anchor and chain are examples of accentuated resistance.

Another class of operative economics is regulation. If an engineer could not perfectly regulate the supply of steam to his cylinders, his engine would be a danger, not an advantage. A good example of regulation is the steam-hammer, which can weld the shaft of an ocean steamer or break a nut for the hammerman. The principle of regulation has many forms. The reins of a driver, the throttle of the steam-engine, the tap, the water-pipe, the pendulum, the watch-balance, the valve and sluice at the water-main or reservoir, all these carry out the one principle of regulation.

Nor must we forget the idea of instrumentation. Of course all industrial means to ends are in one sense instruments. But we distinguish between a machine or an operation and the instruments and tools which workmen personally handle at their work. The hammers, chisels, picks and spades used by our workmen are a separate phase of industry, and to their variety, lightness and adaptability a great deal of modern industrial success is due. It is a recognisable classification.

We can recognise also the principle of content or enclosure. For instance, the steam-boiler owes its usefulness to the possibility of enclosing a given quantity of steam in a powerful vessel. The water-

pipe conveying and distributing water through our towns from distant hills is another example.

A great class of industrial operations consists of transference, transport and carriage by steamer, rail and road.

Another is the reduction of bulk to appropriate weight and sizes for individual consumption. This division practically embraces all middlemen and retailers. It has its correlative in those collectors who aggregate the produce of a district.

Lastly, we have a recognisable phase of industry in measure, the accurate weighing and measuring of goods and products, and forces such as steam and gas and electricity. All these classifications are those of industrial physical phenomena. We present them imperfectly to show that the tangled maze of industrial phenomena can all be reduced to order with sufficient attention.

It appears to us that the neglect of political economists to form a systematic classification of all the concrete facts of industry—of all its purposes, of all the materials used, of all the forms they assume and of all the media by which the raw material is transformed into the finished product—is a grave oversight. It is perfectly possible. The phenomena to be dealt with are not more numerous, varied and obscure than organic life, or even of such a branch of organic life as is treated of in the science of botany alone. At all events the same amount of labour and skill devoted to the classification of economic products and processes as has been devoted to botany would reduce to order the manifold, and indeed the heterosity of the material and mechanical side of industry. It may be said you have your science text-books to give you the classification required. We answer, we want all the concrete facts of industry surveyed from the industrial standpoint. A coat is a concrete economic fact. It is the result of the labours of the farmer, the spinner, the weaver, the dyer, the cutter and the tailor. Hand the coat, this definite, recognisable, concrete actuality. to a chemist and ask him to

tell you what it is. He will give you a formula of oils, salts, acids, etc. He views it simply as a chemist. How different his view and his description to that of the industrialist, who sees not only its elements and its form but also its purpose. We are confident that the whole mass of economic material, process and product, could be exhaustively classified and synthesised. If it is said we see no purpose or usefulness in the suggested classification, we say that we cannot tell until it is done whether it will be useful or not. It will surely be as useful and important as the classifications of botany; and they are useful enough. Surely the systematisation of the results of human effort will be more useful and interesting than the classifications, order in time, and syntheses of geology.

CHAPTER VII

GENERAL CONDITIONS GOVERNING ALL PRODUCTION

WE have seen that economic effort is a form of force and that the measure of that force is the measure of potential industry. Before treating of the particular elements involved in production, and which are consciously included in the conception of cost, there are other general conditions which are no less essential and operative, and which are not consciously counted in cost, which require mention.

We may mention as a feature of industry ever to be borne in mind the fluidity of the industrial movement. It is always in a condition of incipient dissolution, from which it is only saved by the constructive and reparative efforts of industrialists. It is thus in a state of unceasing change. Yet such is the power of the constructive side of industry, its persistence as a force and its continuity as a movement is seldom perilled. Industry has been perilled and may be again. We cannot shut our eyes to the fact that there are numbers of societies that are open antagonists of our present industrial system. Meantime, however, the synthetic interests hold the field. Indeed, they do more, for we cannot but recognise that industry and industrial interests are advancing by leaps and bounds. Every year more members enter its ranks, new natural forces are enchained, new inventions and contrivances lighten labour and increase production, new industrial interests arise and are recognised. A remembrance of these facts is very important. They affect our plans and future prospects. They are a prospective unearned increment in which every industrialist shares. They

produce an optimistic and reasonably venturesome spirit which is of the nature of progress. Pessimism, besides being a state of moral misery and an intellectual curse, is a real enemy of industrial progress. The reason of this rapid progress lies in the inherent fertility of new truth. It spreads in geometrical ratio. One new invention or thought affects millions of operations and millions of interests. With the growing numbers and intelligence of industrialists the number of these progressive thoughts are seen to extend.

Another truth to be borne in mind by the industrialist is that of acceleration. We must not confound acceleration with the general progress and growing momentum of the industrial movement. It is something more specific. Acceleration is the idea of speed, rapidity, shortening of time. That the consciousness of this idea is a matter of popular observation is evident from such phrases as "He is too slow," or "He is too fast for me." These phrases show that certain phases of industrial character have come to be associated with a time element. They assume that economic man is going faster than ever before, that he works faster, that he produces more in a given time than his ancestors did. There is no doubt this popular opinion is substantially grounded. There is a growing acceleration of speed in all movements all over the world. We crowd more into our daily life. We work faster and produce faster than before. We learn quicker and we judge and determine quicker. Not to leave industry, we point to the fact that a large "liner" is now built in three months' time if wanted, an ironclad in six. Nothing is more remarkable than this spirit of acceleration. For instance, if a man once travels by an express train, to travel in a slow one produces a sense of discomfort. Those who are accustomed to a train find a tramcar slow. Those who "bike" cannot afterwards willingly walk. Walking appears so slow that they would rather "bike" the shortest distance. We may take it as an axiom that an experience of acceleration in any form is never

afterwards voluntarily surrendered. We have noticed this state of feeling particularly among mechanics and working men. Once associated with a given rate of speed in connection with work or machinery, they are never afterwards satisfied, they have a sense of dissatisfaction, with all slower movements.

Of course, all economic movement lives under succession in time. But industrialists do not often realise how this adamant condition affects them. There are three timeous relations under which all economic efforts are pursued. There is first the individual life, there is next the national life, and then there is a relation to time itself. Taking the last first, as time rolls on the general industrial movement unfolds. Civilisation advances. New wants and new processes for their satisfaction are invented. So that the later a person is born the greater the advantages surrounding him when he enters his business career. The second time relation is the national. To it the same general considerations are applicable. As time rolls on a country's jurisprudence is wiser and more complete. The system of administration becomes more efficient. The nation itself is accumulating population, power, interests and wealth. In all these advantages the individual worker participates. As an illustration of the imperious conditions of time, we may mention that proposals and plans to bridge the Firths of Tay and Forth were in existence forty years before these works were accomplished. They could only be constructed of steel, and steel at a reasonable cost. That contingency only arose after the discovery of the Bessemer process. Suppose Bessemer's discovery had been postponed another hundred years, the thousands of gigantic undertakings since accomplished would have had to wait. The personal time relation is no less important, though in a different way. The moment of greatest economic opportunity is just the present moment, the new-born time. Every day an individual lives, other things being the same, he recedes from his original position. On entering business a person

chooses a moment and effects a movement. He chooses the best time, gathers the best existent materials and completes the best arrangements. He then correlates himself to a specific moment in time. Whatever changes he may subsequently make, the foundation is laid then and there. Though the individual industrialist does not retrograde a step, the world is always advancing in front of him. The longer he is in business, other things remaining the same, the further he is being removed from the newest in want and supply. If he is to keep up with the times he has to make constantly new arrangements or additions, or even a fresh start. If a person made no new adaptations, every year would see his business a diminishing quantity, until it died out altogether. As a matter of fact, few persons do adopt a policy of constant and radical change and adaptation. Such a class, the Carnegies, Schwabs and Rockfellers, are more numerous in America than Europe. In the large majority of cases, after a few years' effort, business men rest satisfied with the *status quo*, leaving to their successors radical changes. They can afford to rest. Besides, they have some compensation in their fuller experience, riper judgment, the well-tried confidence of their clients and *confrères*, and the choice of markets and customers. This inertia, this suspension of initiation, undoubtedly leads to a reduction of interest and profits, the individual sacrificing something rather than face a fresh beginning or radical change.

There is another principle of somewhat the same nature, natural and business sequence. There are chemical and physical operations, in which the order of the events or processes are as essential to success as the elements or materials themselves that are dealt with. In chemical operations especially it must never be forgotten that the sequence of a synthesis is an essential condition of success. In physical operations the ordered sequence of arrangements makes all the difference between a profitable and an unprofitable transaction. In business arrangements orderly and

timeous arrangements are also a condition of success. We refer to office arrangement and business management.

Then we must refer to the important part specific time and specific place occupy in the industrial movement. In some cases specific time, in other cases specific place, is the governing criterion. In the majority of cases both elements must synchronise to secure success. For instance, in the mineral and the grain trades the time relation is not so important as the locale of the market. Their products do not require to be instantaneously offered for sale. But in the large majority of cases of exchange the specific time is as important as the exact place. If goods arrive too late or too soon the transaction cannot be completed, or, at least, some sacrifice must be made. If a force, or a material, or an article, cannot be transferred to where it is wanted and at the moment it is wanted, there is no possibility of business.

But what governs all economic relations *per se* is the economic law of parcimony—the expenditure of the least amount of force over the narrowest limits of space and in the shortest possible period of time. Indeed, we must add the smallest consumption consistent with health or the realisation of the purpose in view. The minimum of force, space, time and consumption. That seems a crucial law which pervades the whole movement of industry. It also seems a characteristic. Nothing is more noticeable than the uneconomical expenditure of human force in many directions; in religion, morals, patriotism, science and æsthetics. Indeed, the expenditure of energy out of all proportion to the results, or apparent result obtained in fields of activity other than economics is held to be an object in itself, or to intensify or ennoble the course of action pursued. But in economics the law of parcimony governs the whole movement. No economic result is possible with indefinite or extravagant expenditure of means. The greater the economy the greater the amount of economic ends attained. Human energy

is a priceless force not to be lightly thrown away. Economy of space reduces the waste of this energy. Take as an illustration of economy of space the difference between machinery spread over a wide surface and that which is small and compact. Extension in economics is like extension in physics, a waste of power. Your material is heavier, your friction is greater, your power less, your cost more; other things being equal. Take a workshop spread over an unnecessarily large area. Every yard the hands have to walk extra is a waste of power, time and money. Every inch a workman has to reach extra for a tool, every extra yard he has to carry his work is economic waste. The smaller the working area the more the economic efficiency. Concentration in economics is power. And this principle applies to countries. Immense territories and a widely-spread population are an immense industrial loss. The cost of intercourse and inter-communication eats up the energy and profits of the people. The three most efficient industrial powers in Europe are Holland, Belgium and Britain, all small countries. Then economy of time lengthens the period of potential applied effort. It costs the same to support the race while working little and slow as working much and quick. It multiplies the resultant possible under the same amount of capital and supervision. The law of parcimony applied to consumption is at the root of all saving and accumulation. Might we also say of all health and comfort?

All through the industrial movement is dominated by the laws of competition and the survival of the fittest, and competition and closer adjustment to natural law. Being a movement dealing with life and matter, it is subject to the laws of organic and inorganic being. It has a conscious and an unconscious side. It contains a conscious element of competitive superiority and a conscious competition of closer adjustment to law. It contains an unconscious survival of the fittest and an unconscious permanency, the consequence of a truer correlation to actuality. In economics there is a con-

stant pressure upon existing conditions; there is a growth in force and form, in wants and supply, in better adjustment to present conditions and in a reaching forth to new; there are failures and shortcomings, and at the same time victories and survivals. The strongest and fittest survive, the truest adjustment remains. It has been described as industrial war. If it is, it is not industry. War is destruction, poverty and ruin, the elimination of our best and noblest lives. Industrial competition is the rivalry of intelligence and the highest moral qualities. Her victories are the stepping-stones to a higher civilisation, to greater human happiness, and to conditions of higher culture and intelligence. But competition in every form and in every movement and at every moment is the permanent law under which industry is pursued.

Opportunity we must also describe as a general economic condition independent of the individual will. Many individuals are reputed to rise superior to circumstance. We should imagine they were very few in number, if indeed there are any. If you consider that the accident of birth, its time, place, parentage and connections, is a matter independent of the individual will, we must recognise how difficult it is to determine the limits of opportunity. Besides, when a person has achieved exceptional success it is so gratifying to personal vanity to forget our indebtedness to extraneous circumstances that many of the causes of that success are overlooked. Anyway, the exception does not disprove the rule. Favourable opportunity has been the key to the success of most of us. Opportunity comes to all at least once in life. Let us seize it. That is why it comes to us. "There is a tide in the affairs of men which taken at the flood leads on to fortune."

On the other hand, against opportunity we must place the law of risk; the contingency of the unforeseen, the unavoidable, the accidental. The unforeseen and the accidental influences all human affairs, and none more than industry. The industrial movement is so much of a common and social and collective movement,

individual industrial success is so much dependent upon the good fortune and success of neighbours, that probably no other form of human activity exhibits so many instances of unforeseen and undeserved disaster. This is proved by the magnitude of insurance operations. If there were no risk there would be no necessity for insurance. But apart from that, the failure of crops, the epidemics, the wars, the new inventions, the deaths, the storms of the world, unforeseeable and impossible to provide for, must always remain a contingency under which all industrial operations are carried on.

The last condition we would mention is completion. It sounds rather a self-evident proposition that an article or operation is never complete until it is completed. But it is always the self-evident that is never perceived, or at least acted upon. In industry there is no success other than complete success. There are no partial victories. An invention may only need the most trifling circumstance to secure success, but unless that single circumstance is obtained the invention is of no practical use. If an undertaking requires £1,000,000, and you are £1 short, your £999,999 are thrown away. How many abortive enterprises, how many hundreds of millions of capital has been lost through the smallest final contingency being unrealisable? It is the last straw that breaks the camel's back, but it is also the one straw less that prevents the camel's back being broken.

These, then, are the most important general conditions governing all production.

CHAPTER VIII

PARTICULAR ELEMENTS INVOLVED IN PRODUCTION

WHEN we analyse the process of production we find the following elements in it: (1) location; (2) natural agents; (3) machinery and instrumentation; (4) capital; (5) labour; (6) domesticity. These are the primary conditions. A more minute analysis might discover more. For a fairly satisfactory view of our subject these are enough.

(1) A location, a scene or centre of operations, is evidently the first step in entering upon and conducting industry. We must have a locale either to cultivate or utilise, to build our factory or counting-house upon. It is chosen as being near the required market or near the source of the requisite natural agents. The supply of labour on the spot may determine the selection or the fact that the climate is favourable for conditions of exertion. But in all industry the locale selected is very important, and, being a stable or permanent condition, has a constant influence upon every succeeding industrial effort conducted from it.

(2) Natural agents in some form or another are a requisite in all forms of production. Extensive forms of industry are the mere supply of these natural agents. All forms of mining, timber cutting, chemical primaries, etc., are the mere supply to other industries of the materials for manufacture. They enter natural products upon the industrial stage. Land is a natural agent so far as agriculture is concerned. All these agents exist outside of industry, free and economically valueless. They only assume an element of utility and value under the expenditure of economic thought and effort.

The utility and value, the end of production, is thus not in the natural agents themselves, but in the selected quality of the material or agent plus the economic effort.

(3) Instrumentation and machinery. In all industrial production some form of instrumentation is required. It matters not how simple the operation, some tool or utensil is required. It matters not how complex the operation is, machinery will be found to overtake the task. The labourer requires, at least, a spade, or a pick or crowbar, and from that to the engines of the *Campania* or *Majestic* is only one of variety and degree. Exact adaptation to the purpose in hand, simplicity of construction, and lightness consistent with the strength or power required, are the conditions of successful application.

(4) Capital is an essential of production. It is needed to subsist the worker from the time of his birth to the period of economic efficiency. It is required to subsist the worker until his product has assumed a saleable form. Capital is required for the stock of goods awaiting purchase. Also for all those discordances or discrepancies existing between demand and supply. It is impossible exactly to measure and duly proportion the supply and demand of even the most common and familiar products. For instance, in coal-mining we must lay up in summer a stock of coal for winter consumption. That requires a large capital. We require capital to subsist the people from one harvest to another. The harvests reaped in other countries require capital to transfer them to this. The very periodicity of the seasons, *ipso facto*, lock up or absorb a large amount of capital. The tea, indiarubber and whaling interests, etc., not less than the great food crops, all require capital to secure a regular and adequate distribution throughout the year. Some seasons are more generous than others. It is the possession of capital that enables us to hold over the surplus. A large part, the larger part of production is performed by machinery. Machinery is fixed capital. Then we

require capital to create and maintain that complex of civilisation, technically outside the industrial movement itself, but which is more powerful and more influential upon productive industry than industry itself.

(5) Labour is the next element in production. The term, however, is too general to be either useful or representative. There are several forms of labour, each not only specifically distinct but discharging functions totally dissimilar, and of such dissimilarity as to constitute essential difference. There is not the slightest point of similarity between the work of the navvy and that of the director of a large commercial undertaking. In the case of the labourer there is as little mental exertion required as there is physical exertion upon the part of the director. We must therefore split up the term labour into classes more truly representative of the facts. We divide labour into five clearly-marked forms, viz.: (1) physical labour; (2) labour of superintendence; (3) skill; (4) knowledge; and (5) management. A distinction between ability and labour is not enough. There is ability in all five forms of labour and in proportion to the ability of all five forms will their economic efficiency be. It is the economic function discharged which is the real distinction, functions specific and diverse.

(5a) We all know what physical labour means, man as economic force.

(5b) Competing with man as a form of physical force is machinery. Machinery is every day displacing mere mechanical labour. Machinery, while saving physical exertion, requires superintendence. That is why we have made a class of labour of superintendence. Machine superintendence and service is the characteristic form of labour of modern times. It is still a growing movement. While it requires less physical effort, it requires more intelligent attention and minute and concentrated watchfulness and observation.

(5c) Our third distinction is skill. It is composed of the classes we recognise as tradesmen. It ranges from the skill of the village blacksmith—by no means an

unintellectual occupation—to the high artistic touch of the porcelain potter and the line engraver.

(5*d*) A still higher form of labour is that where width of knowledge is as important a factor as skill in application. For instance, the technical knowledge of a shipbuilder and marine engineer is of a very high order. The number of contingencies to be provided for and the abstruse calculations involved require exceptional knowledge, as well as exceptional ability and experience, for the realisation of their plans. So also does the business of brewing, which has now joined the ranks of our highest industrial art. Our practical chemists—those who make an industry of chemical production—require the union of high science and practical skill. This class is characteristic of our time. It is our ideal of future industry. We aim at making a science of all the industrial arts and an industrial side to every form of science.

(5*e*) Our last class is management—a function and quality quite distinct from all the others. Managers (who are in general masters) are the commanding officers of the industrial army. Will, purpose, initiative, courage, knowledge of men and affairs, these are the qualities that make a successful manager and successful master. The head of the house is not only the centre of all the interest of the business, the link connecting every branch and interest and force in the establishment, but he exercises a function unique, distinctive. It is neither labour, skill, nor knowledge. An able manager calls in all the labour, skill and knowledge he requires, and as he requires it. We have known persons direct with great success large commercial and industrial undertakings who had only the most general knowledge of the technique of their business. We have known successful brewers who could not brew, successful shipbuilders who could not themselves lay down the lines of a ship, who reigned successful masters through the brains, skill and knowledge of their subordinates. They knew men and affairs, and their personal masterfulness gave them their industrial victory. Now it is this quality of masterful-

ness we describe as management, the highest and most necessary function in the industrial movement. Masters are the point of union or contact between their undertakings and the outside world.

(6) Domesticity is our last element in production. We are not sure we have made a very happy selection of our term. When we have presented the idea that we cover by it our readers can judge. Labour applied to production always subsumes a certain amount of daily labour applied to an individual's own person and personal needs; that is, a person cannot give his whole time and labour to productive employment. He must clean and clothe himself, he must cook and feed himself, he must warm and shelter himself. These things are as clamorous and necessary as his economic labours themselves. It is only the time and labour after these things are provided for that he has to offer in the labour market, and the remuneration of which must provide for this subsumed contingency of personal service. Now it is not generally the case that a productive labourer does these things for himself. They are done for him by his wife, his mother, or his landlady. That fact brings in the true relation of the female sex to the economic movement. They undertake the discharge of this personal service every worker must have bestowed upon his own person as a preliminary and necessary condition of all labour. An employer, in paying a worker a wage, pays for two kinds of service, one acknowledged, the other subsumed. These two services are in general performed by two different persons, though they are paid through the individual that presents himself at the pay-desk. An employer pays for the public service of the worker and the private service of his wife, mother and landlady, without whose continuous and unacknowledged labours the other service would be impossible, or, at least, largely curtailed. The labour unit is not one but two persons. We will carry this thought a step further. The renewal or perpetuation of our supply of labour is a necessity. It is a law of nature. It is not only a duty, but a necessity, that

those who have received the inheritance of the labour of the past, and who utilise the labour of the present, should provide or make possible the supply of labour for the future; that is, the real labour unit, in contradistinction to the ostensible unit, is not the individual but the family. What, in the eyes of a working man, is a living wage? Not the sum that *he* as an individual, isolated from the existing and necessary conditions upon which human society is based, could personally subsist upon. If we were all bachelors human society would come to an end. A living wage is a wage capable of supporting a family upon. It is a wage remunerating the worker and his wife and providing for the children who are to succeed them. The labour unit, the practical basis of calculation, the determining labour factor, is not the individual, it is the family. What we have obtained from the past the present must pass down to the future unimpaired. That is the actual fact, whatever economic theory may be.

This delineation is real. It is no mere academic distinction. How much of the real efficiency of labour depends on conditions outside the place of work. Not only must a worker be fed, clothed, warmed, rested and housed at the expenditure of labour necessary to secure these essentials, but the amount and manner of such attention and labour greatly affects his efficiency as a worker. A worker goes home cold, wet, tired and hungry. Do you think it makes no difference to his recuperative power sitting down in a cold, cheerless room to eat cold or imperfectly-prepared food? A married worker, tended by the affectionate solicitude of a loving wife, is better cared for, is more effectually rested, and his physical energy earlier restored than one who has all these things to do for himself. Similarly a person engaged in extensive and hazardous financial operations, if he goes home to an unhappy or unsympathetic home, will not have that clearness of vision and calmness of judgment the next day which his more happily circumstanced rival will possess. So we may say that, as a condition of efficient productive labour,

the domestic circumstances or life are matters of prime importance.

All these particular elements involved in production are essential. They are all required, or, rather, are all a necessity. Materials, manipulation, funds, enter more or less into the composition of every form of industry. But, though that is true, they are not all of equal importance in every contingency. They are not of equal importance at every period of a country's history. Sometimes labour has been more important than knowledge, skill than capital. In new countries at the present day labour, population, is the great desideratum. The land must be clothed with humanity. In old countries, again, which still retain their historic vitality and growth, capital, skill and knowledge, initiation and will, are most required to continue the supply of work and find new outlets for the economic energies of the people.

These elements are not of the same relative *individual* industrial importance. The test of economic usefulness and value is the price the world is prepared to pay for them. The world pays for the services of a director of industry a sum many times more than for the work of an ordinary labourer. This personal economic importance is generally the result of the superadded gifts and graces of the industrialist, his natural and acquired qualities. That is why the wealth and power of a small community, with a high standard of individual efficiency, is superior to a nation of vastly greater population but not of the same intellectual and moral calibre. Yet increased capital, skill, knowledge and capacity applied to production always result in an increase of population; that is, provided there is no counteracting influence outside of industry. The population of Britain has risen from 15 millions to 40; the population of Europe has risen from 150 millions to 500 synchronously with our more enlightened industrialism. That increase, we believe, to be a consequence and a condition of enhanced wealth and skill.

Inside the limits of each class there is a strong and constant competition going on among all the individual forms composing the class. In the labour market one individual competes with another for employment. One form of machine competes with another form of different points or newer structure. Rival capitalists compete on "'Change" for the employment of their respective capitals. Masters strive against masters. All through the industrial movement particular forms compete with particular forms for service and survival.

There is competition between the respective classes of phenomena comprising the element of production. The simplest forms of labour are pressed by the ever-increasing population of the world on the one side and the growing use of machinery on the other. Machinery and its superintendence is being pressed by new adaptation, new economies and concentrations, and new inventions of skill and knowledge. The classes of skill and knowledge are threatened from the outside through the growing intellectuality and distaste for arduous physical exertion of the population, a growing feature of the age. If there is a slackness in pressure we believe it to be with the class of capacity and initiative. In proportion to the present volume of industry and to the increased population, there are now fewer masters or independent directors of industry than formerly. The day of numberless small concerns, "small shops," is past. Amalgamation, colossal undertakings, large businesses are the prevailing features. There is more economic energy mustered under one leader than before. There is not the same opportunity for the development of personal qualities as compared with intellectual qualities in modern industry as in times gone by. Our banks, principal manufactories, our railways and shipping concerns have largely—in some cases entirely—assumed a corporate character and a gigantic size. The field and opportunity of individual initiative is perceptibly narrowed. The ranks of proved business capacity in the widest sense is

distinctly limited. In a large business corporation all the employees are specialists. Their immediate chief is the head of a department. It is only late in life the survivors obtain a clear view, and bear the responsibilities of the whole relations of their special corporate organisations and a full conception of all its interests in relation to the rest of the world. It is thus the knowledge and guidance of mature years, as a rule of impaired energy and weakened initiative, of a non-plastic mind, that ultimately falls to the service of the majority of large industrial undertakings at the present day. The conditions of training and the circle of selection has been narrowed by modern industrial developments.

All these elements of production are in a state of continual flux. They exist under conditions of constant dissolution on the one hand and constant repair on the other. The smallest augmentation of the aggregate of production implies the continuous antecedent maintenance of the pre-existing volume of production. Few realise the immense amount of energy involved in a country simply maintaining its position in the industrial conflict. When an economic position has been attained the common idea is that industry, or that state of industry, has become static, that we can now rest on our oars. As a matter of fact, the forms of dissolution are ever at work. Every twenty-four hours sees the consumption and waste of the world's population torn from the previous day's labours. Land, if uncultivated, will return to the wilderness. Houses and buildings return slowly but steadily to decay and ruin, or become unsuited to later requirements or developments. Labour is ever wearing out; the population of to-day is not the same as that of yesterday, nor will be the same as that of to-morrow. Capital is ever being consumed, absorbed, or lost. The personal skill, knowledge and ability of the individual perishes with him. Yet what so permanent as the elements of production viewed as a whole, viewed as a movement? Since the dawn of industry their main

features remain the same. Land, labour, capital, are still with us as they have always been. The permanency is in the movement, not in the individuals forming it, composing it. To the movement itself the particulars or individuals composing it are indifferent. It is like the individual pickle of wheat, a matter of indifference to the world-wide wheat production. The individual particle perishes in a season. The species lasts and prospers through the centuries. All the individual energies, all the individual hopes and fears, ambitions, disappointments and agonies are swallowed up, are lost or merged in wide-world movement and permanency.

It may also be pointed out, that in the progress of the world's industry the cause and the measure of that progression, speaking generally, is the relative preponderance of the higher industrial grades, the passage from the common level of uninformed labour to the ranks of skill, knowledge and capacity. We must all start, then, from the lower plane, either directly or indirectly. The starting-point in the struggle up is from among the millions. There is this to be said of that process. It is very seldom that an individual rises directly from the lowest industrial rank to wield the industrial "marshal's baton." It is true we are all supposed to carry such a "baton" in our pockets, as every French conscript is supposed to carry a "field-marshal's baton" in his haversack. Still, the contingency is seldom realised in the event. It exists in the hopes and imagination of the industrialist as an encouraging possibility. The common experience is a rise from one rank to another in successive generations. The real movement of industrial elevation is slow and sure, a social and industrial step with each succeeding generation. It is well it should be so. Success, to be a success, must be capable of rendering social pleasure and enjoyment to its subject. Besides, as you rise in industry the outside considerations and responsibilities grow with ever greater volume and intensity. It is seldom such a width of human experience comes to those individuals

who, by a mighty and sustained effort, or rarely paralleled good fortune, mount from the humblest to the highest industrial success. But though there are few sudden rises, it is as well to recollect there are many sudden and rapid falls. It takes years to build a fortress or bridge. A few hundredweight of dynamite can send these structures into the air in a second. Nature has many cataclysms—famines, earthquakes, volcanoes, tornadoes, floods. She has few beneficent surprises. It is the order of nature, slow and laborious rise; frequent sudden and rapid descent.

Are these elements of production of the nature of permanent economic laws? Are they conditions of unchanging process? We think of those elements we have mentioned as of that character. But we recognise that there might be new discoveries of obscure existing elements. For instance, we are not sure that to the six elements we have particularised we should not have added a seventh—association. We are not pronouncing for collectivism as against individualism, but for that underlying principle of association common to them both. The connection between master and servant is associative and necessary. The connection between labour and capital is associative and necessary. So also are the other elements we specified. We can also conceive of such developments in future society as would give rise to a new principle, or to a material development of an old one. But while we regard super-addition as a possible and likely contingency, we could not believe in supercession, we could only believe in supercession under two conditions, neither existing under our present economic system. These are that the existing conditions traversed natural law or perpetrated social injustice. These allegations are sometimes made. Let us see how much truth there is in them. These allegations generally take the form of complaints (1) against competition; (2) complaints against inequalities in productive capability; and (3) in complaints as to the power of capital and capitalists. Competition, natural inequality, and power following

upon natural and acquired qualities are all facts in nature, in the world outside of industry as well as inside of it. It cannot, therefore, be said that these laws are laws contradictory to the natural order of things. We all compete, there are none of us alike, and we all use the advantages that have come to us, and as they come to us. That holds good of the labourer as well as the millionaire. Is there an injustice in acquired wealth, in working more than your neighbour? We fail to see it, if the wealth is honestly earned. We think it not only the privilege or right, but the duty of every individual to work as hard and as long as he can, consistent with family, social and national duties. The remedy of the person who is wronged by his neighbour's greater industry and success is in that individual's own hands. Work as hard as your neighbour does and your neighbour's success will be yours. Our policy is to level up, not lower down.

As to the so-called power of wealth as an instrument of injustice, it is a figment of the imagination. The numbers of the very wealthy are comparatively few. The working classes are many. A working man's wealth does not lie in his accumulation but in his wages. Capitalise the working man's wages, add his accumulations, multiply by his numbers, and you have a force that can bid defiance to any union of capitalists. Besides, the working classes command the polls, and through the polls the legislature. If the power of legislation and of public opinion cannot right a wrong, then we would indeed despair, not only of industry, but civilisation. But that contingency is not even distantly in sight.

CHAPTER IX

THE DIVISIONS OF INDUSTRY

VIEWING the industrial movement as a whole, it is seen to be carried on on certain broad general lines. In Mill's time, following Adam Smith, the classification of particularised industry was the three great divisions of agriculture, manufacture and commerce. Now we must make an antecedent classification. We say the primary divisions of industry are the production, exchange, distribution, accumulation, preservation and consumption of wealth. These are all successively dealt with in the succeeding pages. But behind and below these fundamental divisions there are in concrete industry certain broad operative lines which we must more particularly characterise. We would divide the industrial movement into eleven operative, and, in practical life, eleven clearly-marked movements or sections. None of them are absolutely independent, all merge imperceptibly into each other. But they are recognised in the conversation and the transactions of everyday life. Our operative divisions are (1) agriculture; (2) fisheries; (3) mining; (4) manufactures; (5) commerce; (6) communication; (7) transference or the carrying trades; (8) banking; (9) finance; (10) insurance; and (11) accounting.

These operative divisions are plain and distinct. They are recognised by the press and the public. They require distinct qualities and acquirements for their successful prosecution. They are what we call separate and distinct interests, having a distinctive motivation and distinguishable interest from the rest of the community and from the rest of industry.

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These divisions are not only distinctive, they are also sequences, logical sequences. That is, in the numerical order we have placed them, there runs a thread of reason connecting each movement with the higher succeeding form. As a logical sequence they start in and from the simplest forms, gradually rising through a growing complex to the latest modern developments.

We notice among these divisions there runs a rough historical continuity and development. From fisheries and agricultural industries we pass, through manufacture and commerce, to latter-day finance and insurance. There is a natural sequence following upon the order of economic becoming. Subsistence is the primary condition which places agriculture and fisheries first. Mining is the antecedent to manufacture. Means of communication and carrying are preliminary to commerce. Commerce brings us to banking, insurance and accounting.

Another sequence is growing detachment from locale and the limitation of a fixed position. We would say of the movement as a whole, that it manifests itself as growingly free, not only in the sense of thought, but as a physical manifestation. Agriculture is essentially the cultivation of a particular spot. It is a real permanency of position. Mining is freer, not only in the sense of the spread of minerals from the Arctic circle to Tierra del Fuego, but also because the ground mined is never gone over twice. There is no permanent attachment to a particular spot or even district in mining operations. Manufacture, to be successful, must change its position or locale in response to the wider movements of the world. The linen and cotton-spinning industries of this country, once the prerogative of specific centres, are now dispersed throughout the world. In manufacture there is more change, individual and local, actual and potential, than the interests mentioned before it. Means of communication and transfer are in their nature the liberation from the trammels of fixity. So also is commerce. In banking

and finance the transactions and operations are of the nature of freedom from all specific local and even physical attachment, or, in other words, that specific locale is indifferent to them.

The same natural sequence as to duration is noticeable. Agricultural operations take in general the longest period for their specific completion. The others follow in a gradual diminution of the period of time involved in their completion, until in the latest forms of industry the economic incidents are practically economic moments.

There is an evident growth from the simple to the more complex. We pass from the relatively simple industries of fishing and agriculture to the complication of finance and risk. There is also an order of relative necessity. The first industries represent the basis of subsistence, the *sine qua non* of the movement. The others are conveniences, necessities so far as the movement at present is concerned, but not natural necessities.

Finally, there is a gradual passage from the physical to the psychic. Of course, there is much in all the forms of industry that is intellectual. All we mean to say is, that there is more human thought, more ingenuity and inventiveness, more of the impress of the human mind, more of personality and less of the influence of natural agencies in each succeeding class, until when we arrive at banking, finance and insurance, we have intellectual creations dealing with abstract relations and distant future contingencies in which mere physical phenomena performs an unseen and unimportant part.

We now view these divisions of industry as a whole, as an economic synthesis. The aim, the ideal of the industrial movement, is toward a perfect synthesis; it strives for the fulness and perfect proportionateness of a perfect life. It is the consciousness and the satisfaction of every wholesome want and desire. The fuller the industrial life the more wants it creates and supplies, and the more numerous and varied the means of supplying them. The more perfect the life the more perfectly

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proportioned it is. If any particular class of industry is overmanned or assumes from inherent or adventitious circumstances an importance exceeding its services to the common movement, such a disproportion is an injury to industry as a whole, and is carried on at the cost and to the disadvantage of the other divisions of the movement. These particular industrial classes do not always adjust or proportion themselves to the general movement so readily and spontaneously as we would expect. Frequently the required adjustment has to come from without. For instance, the members of a class have a tendency to proportion their work to their numbers, and their pay to their needs or requirements rather than their services. Some classes, such as miners and engineers and spinners, have sometimes sought consciously to disportion the industrial synthesis. Other classes, such as the shopkeepers, do the same unconsciously. There are more shops and shopkeepers than our system of distribution requires. These classes base their prices more on their own needs than on their industrial services. It is only when the other classes of industry awaken to the fact that they are bearing a burden disproportioned to the services rendered that they rouse themselves to secure justice and better service from the defaulting class. Accurate statistics as to the numbers and rates of remuneration of each division of industry are essential data to inform and determine public opinion in view of the required adjustment. We say these principles of fulness and proportionateness lie in the deepest trend of industrial movement. They are industrial forces moving onwards to the greatest service of humanity on lines of truth and righteousness.

It is not difficult to see wherein the importance of a full economic development lies. It puts more strings on the industrial bow. It completes the octave. It furnishes a specific form of industrial occupation for each specific type in the national character. A disaster or check to one form of industry does not entail such serious national consequences. It cultivates and calls

into practical use a wider body of knowledge. It spreads the use of capital over more numerous and more varied forms and more continuous and extended operations than when the industrial synthesis is narrower. The financial stress of the busy season or settling season of specific industries is counteracted by the number of such industries, each of which have a specific and different period of over-indebtedness, thus securing an even call upon capital all the year round. Comparing Britain and Ireland together, what is the main cause of the economic superiority of the former country over the latter? We set aside political, racial, or other causes outside of industry. We think it is the greater number and variety of the industries in Britain compared with Ireland. A failure of crops in Ireland is a national disaster. Agriculture is its only economic interest. A failure of crops in Britain is relatively a trifle. Agriculture is not Britain's sole interest, or even principal interest. Comparing Britain with foreign countries, what is the cause of her national industrial superiority? We think the secret is the fulness, the all-roundness of British industrialism and the true relative proportionateness of her industrial synthesis. Not that the latter is perfect. Indeed, the disproportion between the numbers and effective services and remuneration or cost of some of the classes, and their relations to the industrial movement as a whole, call for reform and readjustment. Still, the fulness and the proportionateness of British industry is truer than that of any of her commercial rivals.

CHAPTER X

WORK AND WAGES

WE come now to the remuneration of labour, but to that limited form of labour which is in receipt wages and which may be described as physical labour. Two things seem necessary and preliminary to the consideration of the remuneration of labour. First, what is the standard amount of work or hours of labour required of the mass of those engaged in labour? and second, what is the minimum cost of the simplest and therefore the foundational forms of labour?

A productive labourer must provide not only for his own wants, he must produce his share, his proportion of the world's work. There is no choice if civilisation is to continue to exist. If it be said that it seems hard that one person should provide not only for himself but for others he knows not of, that he has no interest in and who may even be his own enemies or supposed enemies, we reply, such are the conditions of existence. Nor is it so unjust as it seems. Through the evolution of the industrial complex it costs the modern worker less exertion to produce his share of the world's wants and to produce that share with greater comfort, security and happiness to himself, than it did once to provide for himself alone. The world only asks from him a part of what he could not otherwise produce or possess if he was not a member of that larger common interest we call society.

A worker has to produce first as much as will support himself and dependants. But he must also assist in providing for those other large classes of society who, though not immediately productive, safeguard or assist

the labours of the productive classes. A productive worker must contribute a share of his time and efforts for the support of the military defence of his country. He must assist and provide for the administration, for the support of law, police and the public health. He is often ill and requires the services of a doctor. Education is no longer a luxury, it is a necessity. There is also great and unavoidable waste to make good. There are large losses which every year must be repaired. Fires, shipwrecks, wasted harvests, devastations by gales and floods, all these fall to be provided for by our honest workers. They are essential and compulsory, and they are over and above the labour required for a rigid selfish personal maintenance.

But it is also very desirable to provide each year the increased capital required for our increasing population and growing civilisation. We do not refer to the savings of the working classes from their own wages. We refer just now to the amount of labour required from each worker to carry on the world's business. An increase of capital, a production beyond the wants of the hour to provide employment for future increase of the population, is absolutely essential and has always been provided in the past. Lest we frighten producers by the idea that we would thus impose upon them some appalling altruistic burden, we will show how trivial the individual contribution required really is. We may say that an extra personal exertion equivalent to twopence per day would apparently suffice. Twopence per day is 1s. per week and £2, 12s. per annum. In Britain there are 20,000,000 productive labourers or workers. On these figures the extra personal effort would amount in value to £52,000,000 annually. That fact illustrates upon what apparently trivial efforts great national issues depend. And £52,000,000 of surplus exertion, not abstinence, will we believe supply the needed increment of capital increase.

In determining the hours of labour we must also take into consideration the working time of other countries. No country that means to remain in line with civilisation

can arbitrarily fix the amount of its exertion. It always bears some fixed relation to the labour of other countries. What is wealth and progress but that we work more, that we produce more than other countries? The moment a country works less, or works less intelligently than its neighbours or rivals, that moment it has entered on the stage of decay. Indeed, civilisation itself is just hard, constant and intelligent exertion. There is, however, a great difference in the efficiency of labour in different countries. That difference must be taken into account in comparing the working hours of one country and another. To make a just calculation we must confine ourselves to the working day of the most economically efficient nations. We will take four such: Britain, America, France and Germany. These countries are not all on the same effective plane. Still, they are near enough to stand as a comparison or basis of estimate of labour as compared with the great non-commercial races.

Taking all the foregoing circumstances into consideration, we think if we fix a day's labour in these four leading countries as a day of eight hours' work all the year round, we have found that normal standard of labour or necessary period of exertion which constitutes the world or racial proportion of efficient labour to be contributed by each individual worker. It does seem a natural arrangement, eight hours' work, eight hours' rest and eight hours' recreation. Setting aside sleep, it means as much work as play, as much play as work.

An eight-hour day is fifty-six hours per week. Of course, we fix no hard-and-fast rule. Persons who work under very arduous or unwholesome conditions may legitimately look for somewhat shorter hours. Those that are employed in light or agreeable work may expect hours somewhat longer. We only say that in our opinion fifty-six hours a week is the world's requirement, and the natural length of the working week to be departed from in either direction only after cause shown. In estimating a day's work we too much overlook the fact that workers only work five and a half

days a week. From one o'clock on Saturday till six o'clock on Monday morning there is an *interregnum*—an entire suspension of labour among the vast majority of the working classes. It is only fair, when seeking to form an estimate of the normal working day, that the fact of this suspension of labour for a period of forty-one hours should be borne in mind. Besides the Saturday and Sunday interruptions, outdoor work is often suspended through stress of weather, and in winter the outdoor working day for four months is seriously curtailed. It has been for years past the inclination and wish, as well as the deliberate policy, not only of statesmen, but of the nation at large, to ameliorate the conditions of labour, and more especially, as a form of amelioration, to shorten the hours of work. That is true policy and economic instinct. But it will be conceded that there is a limit of safety in the ameliorating process. This country stands confronted with the rivalry of the world. Any shortening of the hours of labour beyond those stated should only be adopted after the most careful consideration.

The second essential preliminary to the consideration of work and wages is a definite estimate of the minimum cost of subsistence. It is the root fact in the wages problem. A *sine qua non* of the existence of honest and efficient labour is that it should receive a living wage, and to determine a living wage we must know the cost of subsistence. The minimum cost of subsistence was the original setting of agricultural and unskilled labour. The wage of common labour was originally just as much and no more than would subsist the labourer. At the present moment it is the amount millions offer their services at. It is the starting-point in demand, as all labour making an offer of service resolve that, whatever more they may get, they cannot take less than the amount necessary to support themselves. A knowledge of the cost of subsistence enables workers to know what wages to ask and what they are getting, and lets masters know how much to grant and the nature of the concession they are making. It

helps well-paid and skilled labour to realise the advantages they enjoy, and tends to remove discontent based upon ignorance or forgetfulness of what a living wage really is. It also marks the line of distinction between the humblest forms of efficient, independent labour and non-efficient, dependent and casual labour always in a condition of penury. Finally, it enables us to realise our position in relation to other countries. The minimum cost of subsistence, though important as a ground of judgment, is not the actual crux of the British labour problem, at least as yet. But it is the crux and is the real determining factor of the remuneration of the great mass of working humanity abroad. In Europe and Asia the labour problem is just the receiving of that minimum of efficient subsistence which in this country all receive and which, to the great mass of our labour, is assumed as a matter of course. But we must remember that we have to compete with and hold our own in the markets of the world with this vast mass of underpaid labour—labour that only aspires to live, and is happy and contented with the fact of living.

Food is the most important item in the cost of subsistence. It is, however, no more necessary than clothing, warmth, light and shelter. As a matter of fact, with a single individual or married couple without a family, it costs as much to clothe, warm and shelter as it does to feed. We have been unable to find a satisfactory table or formula of dietary scientifically made, yet of practical value. The tables drawn up on chemical and physiological lines are valueless, because they say certain foods are of no nutritive value, while we know the great mass of humanity have lived and thriven upon them from the beginning of time. But anyway an expert's table of dietary conveys no practical idea to the mind as to the amount, form, price and effect of our everyday forms of food. To convey some practical notion of the cost of living we may state what can be purchased for the small sum of 9d. every hour of the day in the open market in every city in Britain and

Ireland. You can purchase a 2 lb. loaf (2d.), $3\frac{1}{2}$ lbs. of potatoes ($1\frac{1}{2}$ d.), $\frac{1}{2}$ lb. of good beef (4d.), and 3 oz. of butter ($1\frac{1}{2}$ d.) for the sum of 9d. That is, 6 lbs. 3 oz. of solid wholesome food can every day be purchased for 9d. Now we say that 6 lbs. 3 oz. of solid food is not only a sufficient but an ample dietary, more in fact than even a hard-working man can consume with health and comfort to himself. This will enable us to form some practical idea of the cost of subsistence. 9d. per day is 5s. 3d. per week. We drop the 3d., as we are convinced the above dietary is on too liberal a scale. That leaves 5s. a week for food. We estimate the cost of clothing and fuel at 2s. 6d. a week, and if we allow the same sum for housing, we have 10s. a week as the sum upon which a single person can be efficiently subsisted. In the case of a family many modifying conditions come in. For instance, the fuel is no more for the family than the individual. The rent of a house is not more, or should not be more, than £5 a year. There is a small saving in made-down clothing. Then the purchase and arrangement of the food for a family greatly reduce the individual cost. Upon the whole, if we fix 14s. as the minimum cost of subsistence calculated upon the purchasing power of that sum, we name a sum that we know many millions of our countrymen constantly live upon. Understand we are not seeking to fix a wage for the humblest of our countrymen to work for or subsist upon. We are only striving to form a scientific basis for the measurement of the necessary remuneration of labour, which can only be done by having before us an irreducible minimum of subsistence or common basis of subsistence.

There are two ways of increasing the remuneration of labour. There is the self-evident and customary way of raising the rate of pay. But there is the other way of increasing the purchasing power of the wages the labourer already receives. Now of the two the last is the most advantageous to the humbler forms of labour, and is also of the greatest general advantage. To reduce the necessary cost of living relieves general

penury, affords a better opportunity to those inclined to save, while at the same time it gives a larger margin for expenditure in pleasure or luxury on the part of those who labour that they may more largely enjoy. To the community at large it is a real accession of potential wealth and economic power. It stands in the same relation to industry that a reduction in the price of fuel stands to our steam factories, railway and steam shipping companies.

It is, however, more especially an advantage to unskilled and humble forms of labour, because they get all the advantage of it. A rise in the wages paid is usually unwillingly given, and is a fact patent to the giver. It is a specific act. It is something that appeals immediately to his attention and directly to his purse. It is viewed as another encroachment upon the profits or potential profits of the master. On the other hand, a lowering of the cost of living is a slow, unobtrusive and generally unnoticed fact. It is not so much a specific act as a slow general movement. And thus we find it in actual life. Labour has secured all the advantage of falling cost. There has been no specific reduction of wages on the specific ground of a decrease in the price of the necessities of life. Thus there are two ways of bettering the remuneration of labour. There is the personal way between buyer and seller, of paying an enhanced price for the particular labour for sale or hire. There is also the impersonal way brought about by the general movement of reducing the cost of living. This affects every form and grade of labour simultaneously and equally. But inasmuch as the humblest forms of labour have little or no expenditure but on the necessities of life, and the sum they have to spend is relatively small, such a reduction of price on life's necessities is a greater boon and a greater proportionate benefit than to the classes above them. A reduction of the price of the loaf alone of one penny makes to hundreds of thousands of families a difference of 7d. per week, which is £1, 10s. 4d. a year, an important sum to a poor man, nothing to a rich one.

Have we reached the lowest limits of cheapening the cost of living, of labour? Can we say that we are sure that there is no further room for improvement? We think there is. Though we have seen this problem scientifically approached by charity and in public institutions, we do not remember to have seen it discussed or tackled as a commercial problem to be solved on commercial lines. We present it for consideration as an industrial problem in the interests of industry, and to be carried out by industrialists. We have pointed out that useful reform in particular divisions of industry have sometimes to be carried out with the guidance and assistance of other classes of industry not so immediately affected, but in the general interest. Besides, there is no conservatism equal to that of the poor, alike in their habits, wants and supplies. In that unhappy sense they are the stable element in society. We are convinced that remedy or alleviation must come, not from outside industry, but from industry outside the working class. There are two circumstances unfavourably affecting the return received by the working people for their wages. In the first place, they buy in the smallest quantities. They are always buying in pennyworths and buying at every meal. A working man's wife in many instances buys the materials for each separate meal. The second evil is that having to buy in small quantities, their dietary is not sufficiently varied and is very imperfectly prepared, and at a cost of fuel disproportional to the advantage. It is difficult to buy small quantities of meat and vegetables, etc., for separate cooking. The very poor, recognising this fact, find it cheaper and more convenient to purchase their food ready cooked. But in these instances they pay in general from 50 to 100 per cent. above the retail price of the article. Our remedy is of the nature of an industrial principle. Although it is in physical form, it is none the less foundational. We require a form of common food that might be regarded as the recognised basis of subsistence. It should be a form of food prepared, containing all the

elements necessary to perfect nutrition in perfect proportions, palatable and attractive. It must be cheap, lasting and convenient. We have no large form of industrial effort seeking to adapt itself through the latest knowledge of our time to the special needs of the largest class of the community, other than those that have come down to us through the centuries. We have something of what we want in the German military sausage, which is composed (we have heard) of meat, pease, flour, vegetables and seasoning. Its cost is comparatively small, much less, we believe, than the common expenditure of a working man for a meal. It is something of this character which we describe as a common form of food, food manufactured in large quantities, on a common principle, of approved materials, in approved proportions. As thus composed we believe the cheaper grains, such as oats, maize, rice, pease, etc., with all the coarse parts of animal meat, could be utilised. This common food we would put up in regular packages of certified weight, and place over all the kingdom at a recognised price. Remember we argue for nothing more than our best forms of recognised industry, placing at the disposal of the people an article of diet of recognised value, cheapened through superior process and economy of service. A labourer's food costs him more *pro rata* than his master's does. A labouring man gets less value for his shilling to-day under our present system than does his employer, though the labourer needs full value for his shilling many times more than his master. We have many economic standards, why not have one more? a standard of subsistence, not in theory but in actual fact. Here is a great opportunity to better the remuneration of labour at no additional cost to the community.

The great law determining work and wages is that of demand and supply. The demand arises from the wants and desires of the world, which world turns to industry for their satisfaction. The world does not treat directly with the workers. It seeks out specially skilled individuals, which it describes as masters, to

look out for labourers who are to fashion the materials into the desiderated forms. The supply of such workers is chosen from among the world's population. They are chosen from among their fellows as being the possessors of the required natural or acquired qualities. Without the demand for the productions of labour there would be no call for the services of labour. Without the services of labour demand would for ever remain unsatisfied. With a perfect adjustment between demand and supply the remuneration of labour would be that amount of wages which would subsist the labourer himself and dependants according to the standard of living of the time. If there is a smaller demand for commodities there must be a correspondingly diminished demand for workers. That contingency profoundly affects the situation. As all must live, those that live by labour must each strive to secure a share of the work to be performed. The masters are not able to employ all the labour offered. They have therefore the power of selection. They will naturally choose those who ask least in return for their services, or those who will serve them best (which is the same thing in different language). Or the departure from perfect equilibrium may take the other direction, and there may be a greater demand for labour than there is supply. In that case the boot is on the other leg. The men then choose their masters and set their own terms. As a rule the initiative in the employment of labour rests with the masters. They receive the orders for work. In general, therefore, they have the first move. In point of fact, it is seldom masters have to compete against each other for workers. It is generally the men who have to look for work. As a rule there is an adequate supply of labour. The pressure of competition for employment is generally keener than the competition of employers for labour. It is in ordinary times only such a power of selection as enables employers to get rid of ineffective or undesirable hands. We have known cases where the employers had to compete actively against each other for individual workers. In the iron trades in the sixties,

and in the period after the passing of the National Education Act, among the building trades masters had actively to compete with each other in the labour market. But we may consider that such cases are exceptional, and that the supply of labour generally exceeds the demand. It is easily seen how this must be so. The population of the world is always advancing. Labour-saving apparatus or arrangements are always being invented. There is thus a constant pressure upon the means of employment. If the trade of the country was to remain stationary even for the shortest period, this pressure for work would immediately reveal itself in a fall of wages. To maintain wages at the existing rate the business of the country must continually expand. To secure a rise above the current rates the business of the country must greatly advance. It is the savings, the inventions, the new markets, the enterprise of employers of labour and capital that gives that impetus to business that gives to labour the command of its own market, and enables labour successfully to demand a rise of wages. And that required prudence, inventiveness and energy on the part of employers is as much to be depended upon, is as much a part of living industry, is as much an economic law as the law of the natural increase of the population itself.

Within the general movement governed by these general laws, of which the law of demand and supply is the chief, there are a number of particular considerations which modify the general laws and affect the remuneration of particular classes and trades. There is, for instance, the arduousness of the work, which is much more severe in some employments than in others. There is the agreeableness or disagreeableness of certain work. The facility with which certain trades are learned, and the time and expense of acquiring a knowledge of others affects the rate of remuneration. So also does the steadiness or continuity of employment; the responsibility and trust necessarily reposed in certain forms of service; the prospects of future success in

others. The healthiness or unhealthiness, the risk and danger of certain employments are all considerations which affect the remunerations of the individuals in certain trades. Certain forms of labour suffer from the encroachment of other trades upon their ranks during a period of prosperity. There is a certain similarity of work, a certain interchangeability, which in times of pressure check an undue rise in wages in certain trades. For instance, the trades of plumbers, tinsmiths and coppersmiths have so much in common that a large proportion of the men of one trade can do the work and pass into the ranks of the others. Coal-hewers, iron-miners, tin and copper-miners require the same physical qualities and manual dexterity, so that any large increase in wages in any particular class of mining work is immediately followed by a rush from the other classes to participate in the new advantage. Finally, though unskilled labour cannot fill the ranks of skilled labour, the latter can always compete with the unskilled class of labour in their own ranks.

Custom plays a considerable part in fixing the rate of wages. The majority of individuals on entering life, and especially industrial life, are prepared as a basis to accept existing conditions. It is only further experience that superinduces a condition of dissatisfaction and a desire for change. This is particularly the case with old established industries, among which no great innovations have disturbed the normal attitude of satisfied security. Agricultural labourers in outlying districts, for instance, have their wages determined more by custom than competition. Those that are not satisfied with the customary or traditional wages move into the towns. No doubt custom has been an advantage to unskilled and unorganised labour in so far that it ignores or modifies individual competition.

Another influence is public opinion. If the public attention is drawn to any injustice in the remuneration of labour, whether such remuneration is too much or too little, it seldom fails to secure a remedy or, at all events, an amelioration. We are all under the influence

of the opinions of our fellows. We like their approval. We dislike falling under their censure, or being the subject of their odium. Besides, public opinion can arrest or modify demand, direct custom, and in a hundred other ways can assist in redressing economic wrong. If it was only enlightening the wage-payers and the wage-receivers as to the justice of their respective causes public opinion would be an invaluable influence.

Besides these influences we must notice the effect upon wages of labour organisations or trades' unions. There cannot be the slightest doubt that these organisations have been of immense benefit, not only to the working classes but to the community at large. The working people of this country would not have been in their present position but for the assistance, the pressure and the enlightenment which organised labour brought to bear upon labour questions. In many trades no rise of wages would have taken place but for organisation. In all cases labour organisation hastened the slow operation of economic law. Masters, as a rule, are slow to recognise that a rise in wages is possible or expedient. They would be less or more than human if that was not the case. A master has no personal interest, no impelling necessity to anticipate a rise in wages. Besides, a master is one with the power of capital and knowledge and ability in him or behind him. To expect working men to pit themselves separately and successively against their employer is unreasonable and contrary to experience. Workers can only be placed in just conditions for the advocacy of their claims by organisation. At the same time it is only to their intelligent representatives that masters can explain all that is implicated in the office side of the "shop." Many millions come into this country every year through wages which, but for labour organisations, would have remained abroad to fructify in the pockets of the wily foreigner. At the same time we must remember the limitations of these organisations. No trade organisation can keep up wages in a falling market. They may delay a too hasty fall, they cannot prevent

the inevitable. The dearer the public have to pay for a commodity, the less it will be used. If there is no cheapening of an article above its natural value, that is a value artificially created by unwise restriction, the greater the prospect of its raising and continuing foreign competition. The greater the temptation such high wages hold out, the sooner their ranks will be filled, and the sooner the turn of the market will be in the employers' favour. But within these lines we rejoice to see labour well paid. How much of the recent wealth of Britain has arisen from her well-paid labour. We have also to repeat the well-known truism that it is not the masters that pay the wages in the end. It is the consumer, the community at large. Everyone, including every working man, has to pay a share of the increased cost of every article in general use.

We return to the question of the remuneration of labour and especially the remuneration of the lower forms of it. As we pointed out that though demand and supply were the regulative agencies in the general wage issue, and competition between individuals the general determination in particular cases, yet these general laws were modified in practice by custom, public opinion and personal benevolence. They were modified in this sense that full advantage was not taken by employers of that competition arising among the workers from the natural increase of population and the invention of labour-saving appliances. That this is not a partial observation applicable to certain specific individuals, but is of the nature of a fact permeating the whole industrial movement, is proved by recent exhaustive analysis of the facts and figures of the national income and parallel statistics. Taking the statistics recently given by Mr Giffen, we find that in 1850 the gross income of the nation was in round numbers 600 million pounds. Of this sum 250 millions went to the labouring classes, and 350 millions went to the classes that paid income tax. At the present moment the income of the working classes is more than 700 million pounds annually. That is, the annual income of the

labouring classes alone exceeds the united income of the nation of fifty years ago by the sum of 100 million pounds. And this increase has been shared in by unskilled as well as skilled labour, and by unorganised as well as by organised labour. We must also point out that during the same period the rate of interest upon capital has steadily declined. It has fallen from about 5 per cent. to nearly 3 per cent. But accompanying this fall in the rate of remuneration of capital the rate of wages, which is the remuneration of common labour, has steadily risen all over the country. These facts show that another law affecting wages has still to be stated. It is that, viewing the remuneration of labour from the widest point of view, employers have paid the wages they could afford, not those they could extort. Any person who has engaged in business knows this to be the case. When an application is made to an employer for an advance of wages, individually or collectively, his first thought is—Can I afford this? If he can it needs little coaxing and less pressure to secure the rise. After all, employers are human beings with all the sympathies, generousities and sense of justice appertaining to humanity. Of course, if an employer's livelihood is imperilled or his business likely to be seriously crippled, he must fight or grant only under compulsion. But these are exceptional cases, and in ordinary circumstances an employer is always glad to give his men a share in the growing prosperity of the concern, more especially as it is the public at large that generally afford the increase. When an employer fights it is because he is driven into a corner.

We have reverted to this point not to accentuate a fact we have already stated, but on account of the importance of the principle implicitly contained in it. That wages in point of fact are not determined solely by strictly economic considerations, and that the acute competition between individual and individual is materially modified in practice, is a very important fact. It shows that morals, not less than natural and economic laws, determine the form of economic ex-

perience. The sordid, selfish competition of our lower nature is not the dominating factor in the industrial movement. It is dominated by the instincts and laws of our higher nature. The real form of competition is not the rivalry of strictly personal interests but a competition of adjustment. And what is the adjustment? It cannot be an adjustment exclusively to the personal and selfish interests of individuals. We have shown that the industrial movement is a social movement, an impersonal movement, that without a due subordination to the higher interests of society industry would cease to exist as we now know it. The competitive adjustments in industry are therefore to the moral foundation of society, not less than to a truer alignment with natural law and superior personal interests.

Still, we have got out of our difficulty only to get into another. If the determination of the rate of wages or the remuneration of large classes of our countrymen is the result of moral sentiment or considerations, as well as economic law, where does the service of political economy come in? More especially is this the case when synchronously with the spread of a higher moral tone, and the apparent supersession or suspension of economic law, the prosperity of the country has advanced by leaps and bounds. If it is true that when moral considerations assist in determining economic issues no penalty is entailed, but on the contrary advantage is gained, then the strictly sordid economic history and teaching of our time seems a huge mistake. The contradiction is only superficial, not real. We could not imagine an antagonism or contradiction between the truest teaching of political economy and the moral instincts of the race. We have to demonstrate that this higher moral instinct benefits industry alike in the individual and the movement. As to the benefit to the individual, if he is a servant, of course he gets the rise with its attendant advantages. If he is a master he also is advantaged. Let us see how. We will suppose the employer wants to fill his work with hands. He offers the lowest wages that he can imagine will be

accepted. Only the poorest hands offer, those who are inefficient, unsteady and shady. The good men hold off. He starts his business with the scum of the trade. It is impossible that master can succeed, can give good work and satisfaction to the public. He will be found out, his trade will dwindle away. We will take the other, the higher type of employer. He views his prospects. He wants the cream of the labour market. He offers the highest wage he can afford. He obtains the pick of the men. He obtains the steadiest, most skilful and easiest supervised hands. He starts able to give to the public all that skilful and honest work can do. All he serves return to him. He only requires time to ensure his success. So much for the individual aspect.

As to the national or general advantage, such an increase in the pay of the humbler forms of labour has gone to increase their economic efficiency. They are better fed and housed, and consequently have more energy and vitality. They work more and work more intelligently. Nothing accentuates stupidity more than under-feeding. There is less weakness and illness among them, and they are economically efficient for a longer time. The children they bring into the world are better men and women than their parents were. The children are more under the influence of moral and intellectual forces than their forbears. They have more initiative, greater courage, are more willing to go into the world and fight the battle of life, take a greater share in its industry and secure a larger proportion of its rewards. In a word, the amelioration we have spoken of gives the world a larger stock of brains, and it is brains now more than mere physical exertion that is the great wealth-producer. Our brain power requires constant renewal from the very foundation of society. Generous treatment, the promptings of the altruistic sentiment, is a valuable economic asset. It is the best business investment. Thus we see that the economic recompense of moral determination appears in forms and conditions of the industrial movement other than

the particular form immediately or most apparently affected. It comes out in the aggregate national economic life.

(*Note.*—When describing the influences affecting wages we forgot to state that imitation or the desire to secure what other people have secured is a great factor in promoting a movement for increased pay. If one trade secures a rise all other trades will seek to secure a similar advantage. Thus the temporary industrial synthesis disturbed in any part requires an almost entire readjustment or confirmation of the existing form.)

CHAPTER XI

PROFIT

WE come now to the wages of a different class of workers, the employers. Their remuneration is described as profit, while the remuneration of the ordinary labourers or servants is described as wages. We must not confound the master with the capitalist. There are many capitalists who are not employers, and many employers who are not capitalists. Indeed, there are many employers who have no capital and conduct their business entirely with borrowed capital; while there are few who conduct all their business without financial assistance of some description, either in the form of mortgages, bills, discounts or advances. The only essential matter is that a master must command capital; if he owns none himself he must command some other person's. Capital is remunerated by interest. Masters alone are remunerated by profit.

Let us see the position the master occupies in the industrial scheme. We should say he occupies a position of co-ordinated relativity. He stands in recognised relation between the labourer on the one hand and the capitalist on the other. The workmen require guidance, concentration of purpose and effort, unity. They obtain that through the head of the house. The capitalist, again, requires business knowledge and skill for the employment or still further concretion of his accumulations. He also turns to the master as his required intermediary. Then, again, the master stands between the consumer and the producer, between the economic demand and its satisfaction. He gathers and voices the demands as he guides the efforts for their satisfaction.

But masters have a still wider relation. They are the point of margin or point of union between the field of industry and the outside world. The outside world recognises industry through the masters. It is they who bring in of science outside of industry such knowledge as they require or can apply to industrial operations. They are the media of applied science. They transform scientific knowledge into practical art. It is they who select the entrants into industry and speed their exit. To be a successful master requires the greatest number of qualities, and the highest qualities in industrial experience. It requires thought, knowledge character and action. Masters are the fullest expression of the industrial "universal particular." They join the thought and the experience of industry on to the highest notional plane in the universal of experience of which the industrial movement is for the time being capable. They practically determine the limits of industry as theirs the initiative and lead. Masters thus stand in a position of relativity to labour and capital, to the producer and consumer, between science and applied art, and between industry and the outside world.

Profit is the difference between the cost of an article and the price obtained for it. A person engaged in business has an income composed of the profits on the aggregate of the number of particular transactions comprising his trade. It follows that in diagnosing profit we must consider the element of cost and the element of price. The one is an intensive movement, the other an extensive. To secure profit an employer must narrow cost or extend price. Increased cost will destroy profits, so also will diminished price. If profit has to be made on increasing cost it can only be done by increasing price. If profit is to be made on diminishing prices it can only be done by still further reducing cost.

It is important to remember that masters' profit comes last, after every other interest has been satisfied and every contingency provided for. An employer has only, though he has at the same time all, that is left

over after every form of expense is paid. He must pay all wages, rent and administrative expense. He must allow for losses through bad debts as well as for waste and deterioration in plant and stock. He must make a provision for risk and the occurrence of unforeseen contingencies. The ablest man will make an occasional mistake through failure of memory, inadequacy of information, or even of judgment. These, however, are not the most serious forms of risk. There is risk beyond the individual control of the master, though he has not the less to bear the loss. Every business stands in some relation to some other business and to the general trade of the country and the world. With every care a disaster among those outside relationships, particular or general, is a cause of loss. There are further dangers arising through change in the public taste and new inventions or discoveries. Financial crisis, war and revolution all profoundly affect profits. For all these contingencies and possible sources of loss provision must be made.

Then interest must be provided for on the capital employed. In every business some capital is required, in some a very large capital. Before a master receives a penny of profit the interest on the capital engaged must be duly paid. In this and other wealthy countries the interest upon capital is very moderate. Day to day loans upon good securities are often negotiated at 1 per cent. per annum. The normal rate of interest upon advances made by bankers to good or approved customers is 5 per cent. per annum. But when capital is scarce or risk great, interest is a formidable item. It ranges from 10 to 40 and even 50 per cent. per annum in some countries, or rather in some parts of the world.

This is not the place to treat of price *per se*. Still, we must say something of it as the extensive side, the other limit of profit than cost. We take it that every person in selling will seek for the highest price he can get. That will be determined in the open market primarily by competition, by demand and supply. But the highest price will begin with the newest and

latest inventions and discoveries. That is only reasonable that the highest rewards should go to those who have served the world most usefully. These discoveries are either protected by patent or remain carefully-preserved secrets. But when these limitations are abandoned or removed it is a long time before a new article or process becomes common property. The new idea takes a long time to percolate through the common ranks of industry and comes to compete on level terms with other industrial forms. Then other influences affect the prices obtained for commodities. The profits of fashionable tradesmen with an aristocratic connection are invariably high. Their customers are ignorant of values and lazy, and imbued with the notion that it is a proof of blue blood to squander their income among fulsome toadies. The profits of those trading with the very poorest classes are also relatively very high. There the ignorance and helplessness of the poor expose them to the blood-sucking propensities of industrial vampires. The profit of all businesses dealing with ladies' finery and fancy articles are also exorbitant. The gratification of a desire is of such an absorbing character to the female mind that the question of value only comes in as an after-thought. In all these cases the consumers are either unable or unwilling to protect their purses. But these exceptions are adventitious and not of the nature of the essential of industry, and in course of time pass away or are modified. These exceptions are of the nature of limitations or suspension of the law of competition in favour of exceptionally circumstanced individuals.

Profits are also determined by competition among masters themselves. Profits are no fixed quantity, they have no independent existence, they must ever be striven for. The advantage of one master is, if looked at particularly, the disadvantage of another. All seek to secure or retain the public patronage. If profits in one branch of business are high, prospective entrants are ever on the outlook to offer to serve the public at a lower price or for a smaller reward. So that there is

not only competition among those inside a trade, but there is also competition to obtain a footing therein by those outside of it. Profits may be said to be the remanent of three competitions: competition in cost, competition in price and competition among masters themselves. All three competitions diminish profits in the interest of the general body of the people.

There is a static element in profit, as there is a static element runs through all the flux of economic phenomena. A person once well served, business relations once established to the satisfaction of two parties, will not be disturbed or broken off without cause shown. That cause will in general be either a greater convenience or a lower price. But subject to that condition no wise person will brave the inconvenience of a new and untried experience.

On the other hand, there is a limit below which a master or business head will not lower his profits. That is when the interest on the capital employed and the remuneration of his personal efforts are to his own mind inadequate, or are not such as are received under the same conditions in other trades or fields of activity. In these circumstances he will either retire from business or transfer his capital and skill to a more remunerative field. In either case he will reduce the competitive element in the trade he has left and will assist those who remain to obtain a normal profit. Thus there comes to be a certain normal ideal of what a fair profit is, which each individual in a field of business expects to attain, and which if he does not attain he considers he is wronged and he remains dissatisfied. He says his business does not pay.

Who is it that pays or contributes that profit? We answer, the general body of the people, the consumers, those that purchase, the world at large. It is the world is served by industry. It is the world that rewards the labours of industrialists by wages, interest and profit.

That brings to us our last question. If it is the consumers that remunerate industry and that con-

tribute the profits that masters receive as their share, what is the character of the service masters render to industry that they should be remunerated? What are profits paid for?

One thing is evident, that remuneration only follows upon useful service. No service to industry and the world, no pay, no remuneration. If we examine the services of masters we can do it from three points of view. As all forms of service depend on special qualities or forms of exertion, to demonstrate the special qualities of a particular class that render particular service is to exhibit the nature of the service such a class render to industry.

The function of masters is distinct from ordinary labour and mechanical skill on the one side, as it is from mere knowledge or intellectuality on the other. It is different also from capitalism. Masters utilise all these industrial forms, but they are not of them. What is required of masters is ability, character and general knowledge. In all other ranks of industry, specialism, intensiveness, is the secret of success. In masters it is width and variety, extensiveness, that is the quality desiderated. In a master we look for ability, adaptability, force of will. He has the moulding of his business, it takes its form from him. But as he also joins and adapts his firm's particular interests to the general body of industry, and thence on to the world movement, he must have force of character, and a knowledge of the world and its affairs that is not of the same essential importance to the other specialism or sectionalism of industry. A master's services then, in so far as they are the reflection of the qualities required of him, are of the highest in industry. In that view we have shown the personal equation. But we may also view the nature of a master's services in the light of his mere status and position in the movement. This is an impersonal relation. It is not of his own making, but is given to him by the other of industry and the world. He earns it, he does not make it. It is a position of trust a master occupies. It is not everyone

to whom the workers give their trust. It is not everyone to whom the capitalist will entrust his accumulations. It is not everyone on whom a buyer will rely. Neither is it everyone a seller will trust with his property. Thus it is not ability alone that makes a master. He must receive the trust and support of those outside himself. Yet though given him this trust is one of the essential elements in making a profit. Let those other than the master withdraw their trust from him for a day or an hour and his life's time labour collapses like a castle of cards.

We can also view a master's services in the concrete. With this personal ability and social confidence, what does he do? He supplies the public wants efficiently and economically. In proportion to his personal ability and the extent of the confidence he enjoys does he serve the public more efficiently and more cheaply. He serves the public better because he organises his business better, employs more efficient workers, makes fewest losses and perpetrates fewest mistakes. He is the first to perceive a public want, even before the public themselves recognise it, and he is the first to discover or recognise the means of its satisfaction. In proportion to the public confidence does his trade enlarge, which, as a rule, means additional economy, and the less does he pay for materials and interest.

We say that the public remunerate, through profit, the masters. The master who is best remunerated is he who satisfies the public wants best and cheapest. But good work is costly. The better the work the dearer it is. To cheapen price is to reduce profit. Yet only to those who give better and costlier work will the public extend their patronage. That brings us to the last point, that the public have no direct or specific or conscious intention to remunerate the master or yield him profits. The public only mean to advantage themselves when they buy. Thus the master's profit is only the utilisation of an opportunity presented by the public demands, and that opportunity is only given to those who are always bettering the character of their service. Their

service is better value to the public purse and an apparent reduction of the master's remuneration, profit. But this reduction is apparent only. If the master can only receive the public patronage by increasing value and lowering price, what must he do to retain even any profit? He must ever be improving every feature of his business. It is the new discoveries, the new processes, the new arrangements, the wiser provisions that yield, continue or enhance profits. If a master makes no new and better arrangements his profit disappears. Where there is no adequate ability and its increasing exercise, and where there is not constant and consistent probity, there is not that condition of service which the public alone remunerates. The price and quality of to-day is not the price and quality expected by the public to-morrow. And the public are right. Forward, always forward, is the rule. The public look for this constant improvement, and hitherto they have never looked in vain.

CHAPTER XII

RENT AND ROYALTIES

RENT or royalty is a sum paid for the use of a natural agent which is indispensable or an advantage in production. The natural agent must possess features of exceptional usefulness to create a demand for it ; and it must be limited in amount or extent, otherwise no person would pay for its use. The number of these exceptional agencies are many and extending. They are mainly certain fertile portions of land, certain minerals, certain localities and certain forms of natural force.

The oldest form of rent is that for the use of particular portions of land. It is not all land that yields a rent, but only the fertile portions of it. A large part of the earth's surface, indeed much the largest part of it, is incapable of cultivation and can never yield rent. When the expenditure of labour upon the cultivation of the soil does not yield as much as subsist the labourer, it is evident, not only that he cannot pay rent, but also that this ungenerous soil must go out of cultivation. Where the produce of the soil is precisely equal to the wages of subsistence, while there is no rent to be obtained, the soil will still remain in cultivation. But if the soil is so fertile naturally, and so favourably placed climatically as to yield more to the ordinary exertion of the cultivator than provide for his subsistence and for the interest of the capital employed, and for his wages of superintendence, the land presenting this spontaneous generosity will yield a rent.

Rent in the case of land is, generally speaking, the difference between the market price of the produce and

the cost of its production. It is a variable element. When the prices of produce are high and the cost of cultivation remains the same, the rent increases in value and amount. On the other hand, if the prices fall and the cost remains the same, the surplus called rent is reduced. But suppose the cost of production has become the varying element, the market prices remaining the same, then if the cost of the production is increased, rent is by the same sum diminished; or if the cost of production is lessened, then rent is increased. It will thus be seen that rent is a residue, the remanent element when all other contingencies are provided for. Like profit, rent comes last.

A factor that largely affects rent is just the common law of competition; competition of landlords to obtain clients and competition among agriculturists to obtain holdings. If the other interests in a country are limited in number and opportunity, and the only prospect of obtaining a livelihood among a people is from the cultivation of the soil, then a real land hunger sets in among the people and they offer the highest rents compatible with existence. On the other hand, amid a choice of occupations landlords have to increase the inducements to obtain the required number of tenants, they have to reduce the rents.

We have said that rent is a residual contingency. Let us look closer at the conditions governing it. The first is a subsumption not generally stated. Rent is a contingency involved in the cultivation of the soil. The first condition then of the existence of rent is the fact of cultivation. And not only cultivation, but the character and efficiency of that cultivation. The soil has to be reclaimed; that is, its weeds subdued, its stones and superabundant moisture eliminated, its soil manipulated to a suitable mechanical condition. These are preliminaries. It requires also special knowledge, skill and labour to extract the properties of the soil and reach a standard of agricultural efficiency. This standard is ever rising, the productivity of the soil is ever increasing. Now this artificial fertility, this super-

induced fertility, cannot be separated from the natural fertility of the soil. In a few years, unless otherwise provided for, it is the basis of the calculation the landlord estimates his rent upon.

Before we reach the residue of rent the interest upon the capital expended has to be allowed for. That capital is of two kinds. That of the occupant of the holding for the time being, the current capital. And that of the fixed capital, generally provided by the landlord, which has been expended on drainage, fencing, buildings and roads. When all these contingencies are provided for the actual element of rent is a very small contingency, obtained only in the case of land of exceptional fertility and favourable position. The question of natural rent is of less intrinsic importance than it seems. It hardly exists here. What we call rent in this country is, in ninety-nine cases out of a hundred, only interest upon capital and the reward of skill. And very poor interest it is, if you consider the long centuries upon which that capital and skill has been expended to obtain or rather create it. The importance of the question of rent arises from the theories and political interests of those who, under the sanction of economic principle, would lead the people on to spoliation.

Besides the fertility of the soil as an element in rent, the climate and location of the land cultivated is a factor. The first crops that come into the market obtain the highest prices, and in proportion as early produce anticipates the arrival of the general crop the higher is the price. This earliness is quite distinct from fertility, as its extra price is given for something other than its abundance. It is the time element which is the cause of the enhanced price. We know early farms in certain districts which cannot turn out a crop nearly as heavy or as good as some late farms, and yet the rents of these early farms are twice as much and in some cases three times as much as the later farms; the explanation being the high price obtained for early produce and the double crop. In Cornwall and the Channel Islands from £12 to £15 per acre of rent is

paid for land of the same intrinsic fertility which in Scotland lets for £2, 10s. or £3 per acre. That is a real case of natural rent, but its area is insignificant.

Proximity to market is also an element in rent. This arises in the saving of the cost of the transportation of produce and materials from and to the farm. We have known the cost of cartage of wheat by bullock wagons from the interior of a country to the nearest seaport equal the price obtained for the wheat. But we believe the principal reason is the personal knowledge the local cultivator acquires of the local market. He sells his produce more timeously and more advantageously. He buys his manures and necessities more cheaply. He can do more for his farm at the same or less cost than a farmer further away. Travelling through the country in a railway train the improvement of the agricultural condition of the land in the neighbourhood of towns of any size is so marked and invariable as to convince the observer that it is no casual coincidence but a general economic law.

These are the constitutive elements of agricultural ostensible rent, which, when we have analysed them, leave a residual factor of natural rent. But, as we have already stated, the primary element constituting the amount received as rent, and therefore determining the rent-yielding area, is the market price of the produce. This produce is of two kinds: produce which can only be reared in a particular country, and the price of which is determined by conditions of cost and competition, demand and supply, within that country; and produce which can be raised in and transported from other countries, and the price of which is determined by world-wide conditions. Fortunately, the last class are those forms of produce which constitute or are the basis of subsistence and the common necessities of life, and they are grown in every country and clime in the world. The supply of these in the widest sense is nearly uniform. For it is seldom the whole world's supply is unfavourably and simultaneously affected, a shortage in one country, or in one form of produce, being counter-

balanced by a more abundant supply in another country and in other forms. Thus the high prices of years of scarcity have become things of the past. On the other hand, the excessively low prices in years of plenty have been modified by reducing the competition of some countries and finding a foreign market for surplus produce in others. Prices for the main and essential kinds of produce have been steadied, but they have been steadied on a lower plane. The limits of variation in price have been narrowed. It follows that the residual constituting rent obtained for land devoted to rearing the main food supply of the people is determined by the world's price for such principal productions, and participates in this greater steadiness; but steadiness on a lower plane, so low, indeed, that it practically eliminates natural rent from all corn-bearing land in Britain. It is Britain's special or local products that secure prices that permit of natural rent.

But though it may be a matter of dispute how much of natural rent remains in land devoted to ordinary agricultural pursuits in this country, there can be no doubt about genuine rent being obtained for special portions of land on other considerations than their fertility. For instance, land surrounded with natural beauty, or affording good sport, or eminently salubrious, all yield genuine rent. No land yields such a large natural rent as the land near a mineral well, in a dry and bracing climate, or in a health-recuperating district. And the reason is not far to seek. Our town life is trying and railway communication is speedy. While we do our business in town, we seek to live amid the beautiful and the restorative. The classes living on the interest of their capital and those who make a living outside of industry are ever increasing in numbers. To them it is a matter of indifference where they live, and they naturally gravitate to places possessing advantages and offering attractions. In these favoured districts natural rent is still a fact.

There is another class of land yielding rent, not for its agricultural use, but because of its convenience and

proximity to centres of population. We may call this form urban rent. The reason land yields rent in towns is because it is limited, strictly limited in quantity, and, at the same time, it is useful and sometimes necessary. In and around all large towns building sites yield a real rent and form a real asset of large and growing value. These urban sites, demanding enormous rents not only per acre and even per square yard, are eagerly competed for by persons who have spent their life in successful business, and who never throw away their money. Let us see what is the origin and constitution of this asset.

Two persons cannot stand on the same spot. Yet, if two or more persons wish to stand on the same spot, how are you going to decide between them? You can only give it to one. If you give it to one, all others must be dispossessed. You might give it by arbitrary favour, but if you did you supersede the law of reason upon which all true economic interests must ultimately be determined. You have then to determine in favour of one specific individual on some intelligible and permanent principle. What other principle can you adopt than that of highest usefulness? Which of the persons is most likely to utilise this particular spot of ground for the greatest public advantage? Obviously it is the one prepared to pay the highest price for it. Either the interests he already possesses necessitate this large payment, or by making this large payment he sees a reasonable prospect of creating large interests. Now, from an economic point of view, the larger the sum an individual is able or prepared to pay for an economic privilege, the larger his stake in the national well-being, the greater his efficiency and usefulness in the industrial movement.

This, then, is the *raison d'être* of urban rent. Let us see its genesis and development. We will find it in the life history of urban growth. When population gravitates towards specific centres it arises from some circumstance of special privilege or advantage appertaining to that locality. A safe harbour, the highest

navigable point of a river, a ford, a defensible position are all special circumstances calculated to form a centre of population. In modern times proximity to great natural agents or to centres in the railway system of the country lead to the same results. They form receiving or distributing centres. The administrative centres of a county, its capital, the centres of its provincial and parochial government, all draw together sections or masses of the surrounding population. The nearer an individual located himself to any of these natural and artificial advantages, the more he would advantage himself. He would have readier access to the local cause of the accretion. Other visitants to the same place, for the same or similar reasons, would come under his observation. They would utilise their visit to the common centre to establish other relations and do other kinds of business with all kinds of people. They would sell their corn to one another and make a market. They would purchase the family necessities. They would purchase sadlery, utensils and machinery. A centre once formed, thousands of others would flock to it to sell and to buy. But the best place to buy and to sell was always the nearest to this common centre. Those in the centre and its neighbourhood saw more people, had more visitants, did more business, made more profits and acquired more wealth than those who were further away, who had fewer visitants because they had fewer attractions. Individuals seeing the growing popularity of these favoured spots, sought to acquire them. They offered higher rents for the privilege enjoyed. To retain their advantages, the then occupants had to outbid the newcomers. Thus rent rose. Rent was paid because a fortune waited for those who had the sense and courage to retain at high apparent sacrifice their position of advantage.

Enormous sums are now paid for a few square yards and even feet in the business centres of London, New York, Paris and Berlin. And it is worth it, or it would not be paid. Indeed, the sums paid for city land demonstrates that not convenience, or even advantage,

but real necessity dictates the prices paid. And we can see the reason. Among financial and merchant princes, time is a valuable commodity. Distance is thus intrinsically important. Association, opportunity, knowledge, all depend upon frequent contact with your fellows. To do business successfully you must be in actual touch with your *confrères* or *clientèle*. It is only by contact and actual personal observation that much of the knowledge and data of successful business can be obtained. When you are trusting millions, to see the man you trust them to is very important. So also to speak with him. Habits of life and growth in knowledge and ability are not easily hid or counterfeited. Thus the tendency is to concentrate the great operations of industry within the narrowest radius of space, and all rents for ground space within that limited area will bring a price proportional to its position and importance.

The same considerations hold good if we descend to the lower stratas of industry. We will take the case of an average artisan and we will suppose he is dissatisfied with the amount of ground rent he pays. He is resolved to build a house on ground that he can secure at the ordinary agricultural rent. He has been living heretofore near the centre of the city where his work is. To get cheap land he finds he has to go three miles away. Thereafter he finds it takes him one hour to reach his work and one hour to return. He must do that at least. He thus works eleven hours a day instead of nine. He used to see his family at breakfast and dinner-time, he now only sees them at night. He has to carry his breakfast and dinner with him and eat them under circumstances of discomfort. And how much does he save? He saves nothing, but has actually involved himself in pecuniary loss. Two hours extra work per day is 1s. a day and 6s. per week. Remember, we are not prepared to say, or rather we do say there are other compensating advantages in a wide and healthy distribution of the population. We only say that as far as pecuniary advantages are concerned the rent paid for conveniently-situated property is well invested and *in itself* profitable.

But although this relief of inter-city congestion is no personal advantage to those who transfer themselves to the surrounding districts, it is an immense advantage to those who are left. It reduces the demand on the inter-city land monopoly. We don't use the word land monopoly in any invidious sense. It is a monopoly which has arisen naturally and exists justly and legally. But a monopoly it is. Thus reducing the demand it lowers the price to those that remain. And remember, suppose a tenth of the householders remove, the land rents of those who remain are not lowered only a tenth. A tenth less demand is followed by more than a fall of a tenth in the price. The fall in price will be not less than 25 per cent., possibly 33 per cent. This is in accordance with economic law.

While we are on the subject of city areas, we may comment on the dangers and disadvantages of over-centralisation and the over-growth of cities. The great distance that business men and workmen have to travel to and from their work in large cities is an immense national loss. It is now out of all just proportion to their day's labour. A city of five millions, indeed a city of one million inhabitants, seems as monstrous an anacronism as the mastodon and mammoth. It seems an abnormal development on prehistoric or early lines. This evil seems worth the attention of the leaders of economic opinion. The industrial community might try a little more dispersion. Reasonable decentralisation has many advantages, not the least of which is fuller knowledge and more personal initiation, less unreasoning faddism and common panics.

Mining royalties are another form of rent for the use of a useful but limited natural agent. So also is the sum paid for certain fishing rights. Also for water power, which as a source of generating electricity has resumed its pristine importance in the industrial field. Every year the number or prospective number of these natural agencies seems to increase, but they are all governed, as far as usefulness and value are concerned, by the principles we have applied to land.

CHAPTER XIII

MEASURE, VALUE AND PRICE

WE have summarised the principal laws involved in production. The commodity is made. It is ready for sale. Before we put it on the market, we must ask ourselves what are we going to ask for it, what price will we put upon it? This question, apparently so simple and easy, is in reality a very complex and difficult matter. If a person asks too little he is a loser. If he asks too much he has no sale. If a producer has no definite conception upon which to calculate his price, he is abrogating his own judgment in favour of that of the buyer, whom he assumes to be better informed than himself.

A condition of valuation is a specific form or measurement. You cannot attach a price to what cannot be specifically isolated from surrounding phenomena. It must be differentiated by its assuming a specific form, a single article, which in its totality embraces many forms of value and many results of particular forms of skill. A cabinet, for instance, is such an independent creation, the ultimate result of a series of varied and independent operations; such as the wood-carver, the ivory-turner, the mirror-maker, the brassfounder, the nail-maker, the painter and the varnisher. Or the product may be specifically measured by superficial area, such as cloth, or by weight as we weigh iron or quinine, or by cubic contents as we mensurate timber, or by simple content as we measure corn or wine. In more modern times we have also to measure forms of force, and in that case we have to find a mechanical equivalent of the force used. In gas used for driving

engines, we measure the force used by volume of a specific density and calorific power. In the case of electricity by amperes on the basis of the interchangeability of heat and energy.

The economic phenomena valued is either particular, intermediary, general or ultimate. It is particular, for instance, in the wages of the worker. It is intermediate as in the case of the spinning, weaving, dying and tailoring constituting a coat. It is general as in the case of the world's corn crop, which depends upon world-wide conditions. And it is ultimate when the result is sold for consumption, when no further change is intended in it, or when it has assumed the form of fixed capital.

The valuation process is conducted by two parties, the buyer and the seller. But in many special cases buyer or seller, or buyer and seller, have to employ the agency of experts. It is not everyone who can value a picture, a parcel of tea, a lot of essential oils, or a run of electric power. In all these cases the judgment of the dealer is based upon the superior knowledge and experience of the specialist.

Need it be said that the valuation process is immensely assisted, accelerated and trued by a simple consistent, scientific and logical system of weights and measures of national sanction and international recognition. Difficult calculations foster error, varied standards lead to confusion, obscure processes of estimating value advantage the skilful at the expense of the simple. Now we say it is truer economic policy to have simplicity rather than complexity, to advantage the many rather than the few, to have a general level of sure and moderate profits rather than large spasmodic profits of a few obtained at the cost and to the disadvantage of the many. We have not mentioned the saving of time and labour obtained by such a scientific system. It is greater than people imagine. Suppose by a simple form or forms of measure we could save one minute a day to everyone engaged in industry, that would amount to 300 minutes for each individual in the year, 300 minutes is thirty-seven working hours. Between

producers and consumers there will not be less than 500 million persons in the world affected. That means an aggregate saving of 18,500,000,000 working hours annually to the race. It is then of great importance to put all the instrumentations of commerce upon a simple, coherent and uniform basis. We believe in the advantages of the decimal system from its superior simplicity and universality of application. But we also seek for a philosophic correlation between all the different standards of measurements, weight, content, superficies and value. Our several forms of standard should form parts of a rational whole, a correlated synthesis of mensuration.

The other condition of valuation is a common measure. We describe it as fixing or determining the price of an article. It is evident if we had no standard by which to fix the value of commodities, these could only be exchanged by barter, each utility being compared with another by an independent mental process of valuation. Each individual would require to compute the cost, not only of the article he offered, but also of that it was suggested he should receive in exchange. It is easier to have a standard of common reference, to which both buyer and seller can relate their several productions, than an infinitude of independent and isolated computations. In barter you have two variables. In sale you have one variable and one constant, an immensely easier process. Besides, in all estimates of variability and relativity, you must either have or assume or subsume some principle or form of experience upon which to base your comparison. Amid the constant flux of economic prices, a common standard of value is a stable element, a logical fact, a thread of reason running through and connecting together all the flux and inherent dissonances of industrial phenomena.

We could imagine such a standard formed upon strictly scientific grounds and stated in precise scientific terms. Though the practical difficulties are great, we have no doubt they will be overcome, and a standard of value formed on a scientific determination of the amount of physical and mental energy, and other con-

tingencies expended and involved in every process and every creation of economic production. But that is not yet, indeed it is not even near. We have therefore to be satisfied with a standard practically effective and yet not perfect, nor based on strictly scientific grounds. We have to be content with a general empirical standard to measure or rather compute the results of industrial labours. For such a standard these things are requisite: (1) that the standard should be representative; (2) that it be stable and permanent; (3) that it be limited in quantity; (4) that it be easily apprehended of the people; (5) that it be of universal recognition and application; (6) that it can be coined into what we call money, which means that it can be divided into small and convenient pieces of specific weight; and (7) it must be a unity.

(1) By being representative we mean that the substance selected as a standard of value must be obtained under all the conditions under which the articles or productions to which it is to be applied are obtained. It must be a substance obtained under the widest and most representative conditions of capital, labour, skill and ability. If that was not the case, if it was not representative of all industrial conditions, it could only value a part of commodities, such part as was paralleled by the experience involved in its own particular production. It could only be used for a partial computation of value, and another standard or other considerations of value would be applied or superadded to the remaining unvalued elements of the cost of production.

(2) The standard of value must be stable and permanent. It must be subject to at least fewer fluctuations in value than the utilities it has to measure. The more stable it is the more perfect it is as a standard. Its fluctuations must be similar to the fluctuations of the other commodities it values. It must be permanent in form also, not given to change within or liable to spontaneous decay.

(3) The standard of value must be limited in amount or relatively rare. It requires to be high in price. If it was not high in price it would be practically

useless as a measure of value and too bulky to form a convenient media of payment.

(4) It must be easily apprehended of the people. A standard of value is not used only by millionaires and rich people. It is used by the humblest labourer in estimating his labour and in purchasing his humble everyday requirements. It must be something visible and tangible, so that the most ignorant may recognise it, know when they have it and when they part with it. Not easily lost or difficult to handle. It must be some substance easily to be counted and capable of being used in every possible quantity in every possible relation of industrial life. The measure of value must in itself and its method of application be of such simplicity that the intelligence of the commonest labour may be capable of using and applying it, if not with scientific, at least with reasonable practical accuracy.

(5) This standard of value must also have the character of universality. It must be able to exist in every country and clime, and it must be recognised by the world at large. A world's business can only be conducted by a world-recognised media. It must be capable of measuring every form of industrial value in every circumstance of place and time.

(6) A standard of value must also have the quality of being readily coined into specific and convenient weights and forms of the same intrinsic value.

(7) A standard of value must be a unity. It must be a simple substance, a single form of experience. A dual standard, a two one, a double single, is an anachronism, an impossibility. It is unthinkable. The so-called dual standard of gold and silver is really a correlation of the value of two substances of different values. This correlation is indeed a unity, but it is a unity obtained by unnecessary previous complexity, by a triple instead of a single calculation ; a superfluous intellectual process, which would double the difficulty of striking prices all over the world. The common-sense and practical experience of humanity has after

centuries definitely gravitated to the recognition, and the advantages of the recognition, of a single standard.

The world has arrived at a consensus on a standard of value. That standard is the metal gold. It is not gold money, though in so far as money is made of gold it is included, but it is gold itself, the metal, gold bullion. The metal gold is now the universal of value by which all services, operations and products are measured and valued. The standard of value is the whole body, the aggregate or stock of gold existing in the world at the time of comparison. The reason that gold has been gravitated upon is that it contains all the qualities and properties appertaining to general production and has besides certain *special* properties which especially fit it for the function of valuation. In itself and viewed as an industrial product, gold has qualities that make it an object of desire and acquisition. It was sought for as an object in itself long before it was used as a standard of value. If we discovered a better and more scientific standard to-morrow it would still retain commercial value. In a year or two it would be the same price as before its demonetisation. It is useful in the arts, it is attractive in appearance, and pleases the eye above all other metals. It is the same colour and of the radiance of the sun. It is obtained under conditions of exceptional width. There is a large element of luck and risk in obtaining it. It is gathered and it is mined. The individual prospector picks it up in nuggets and washes it out in grains, while the mining company with a capital of millions obtains it by crushing and intricate processes of abstraction. It is found near civilisation, and on distant shores and amid deserts where the maintenance of the labourer is difficult and costly. Thus as a commercial commodity it is obtained under the fullest representative conditions. At the same time, the supply is strictly limited by conditions of cost, and is more regular than that of any other article of commerce in the world. It is inherently permanent and not subject to deterioration in quality, to organic

change or natural waste. Yet it is when exposed to attrition, subject to wear, which accentuates economy in its use, preserves its representative character, and brings it under a cycle of contingencies industrialism provides for. It is ductile and therefore adapted to subdivision; it is weighty and portable. It is so distinguishable by touch and weight that a person could pick out in the dark a specific coin of gold from among a score of parallel or identical forms of other metals. It is not affected by heat, or cold, or wet. We are not surprised, therefore, to find that the common experience of the race, after thousands of years of experience, has ultimately adopted gold as its standard of value. It was the standard of value in Babylonia some thousand of years before the Christian era.

In modern times two features in the natural history of gold deserve mention. The first is the exhaustion of "placer" or surface beds as sources of supply. Gold is now mainly dredged and mined, and is therefore only obtainable under the characteristic conditions and contingencies of the most recent forms of industry. It requires capital and skill, conditions of foresight, and contingencies of risk and loss, as arduous and trying as that of the most scientific forms of industry. This gives it increased representative value and greater steadiness. Increase of steadiness in value is proportional to the width of the conditions of production. The second is that the margin of production is so fine that a rise in price brings more sources of supply into immediate activity, and any fall of price immediately closes other sources of supply. There are always mineral reefs which would pay to mine on the slightest rise in value, as there are always mines which barely pay at present prices. Thus there is a steadiness secured for gold value unsurpassed, and indeed unequalled, by any other form of production.

Viewing the economic movement as a whole, and its particular relation to gold as a standard of value and instrument of valuation, we see the most important point in that relation to be the representative character

of gold. It is industrially the fullest. It is in truest alignment with all the conditions governing production. There are no conditions of physics and science, no contingencies of time and place, no forms of psychic experience from hope and fear to ingenuity, talent and character that has not its representation in the production of gold. It is, therefore, a true representation of modern production. It is neither the beauty of gold, nor its durability, nor yet any of its *special* qualities, that has made that substance the universally-recognised standard of value, but simply its perfect reflex of the full productive process.

It follows, therefore, that in applying gold to estimate the value of other commodities we are measuring one form of experience by another, one complex by another. The natural idea is that the value of gold as a measure is its simplicity, its particularity, its inherent singleness. In reality its real service to value lies in the width and multifarious character of the human experience represented in its existence as an economic product. It is a representation in concrete and specific material form of a wide cycle of physical and psychic activities. It is a physical equivalent of psychic force. Gold is a visible and tangible abstraction of which the metal represents the descriptive term; with this advantage over the verbal term, that it can be measured, multiplied and divided with the greatest mechanical accuracy and facility, and on a consensus of apprehension. It represents in actual life the mechanical syllogism invented by the late Professor Jevons. There are multitudes who cannot follow a verbal logical process who yet can perfectly follow, apprehend and apply this visible and tangible mechanical equivalent, which, of course, is as truly a logical process as any demonstration in Euclid. It is not only that this mathematical and mechanical valuation of experience can be done by all, literates and illiterates alike, by the aid of gold, but even educated people themselves can form a more rapid and accurate estimate by that process than by any form of valuation expressed in language.

We have got the quantity to be valued, we have got the standard of valuation, let us see next what *is* valued. It is the cost of arranging certain forms of matter through force so as to satisfy the wants, gratify the desires and add to the conveniences of human life. It starts with the acquisition of certain limited materials to work upon and to work with. We have the amount of force expended in adapting these materials to their purpose to value. Human energy is vastly aided by the use of chemical processes and mechanical agencies, the invention of ability, and constructed out of capital. The reward of that inventiveness and the interest on that capital has to be allowed for. So also has rent and taxes. Natural waste, unforeseeable loss and risk has to be provided for. To appraise at their proper value even those factors would be a wonderful achievement. But far more complex and difficult are the economic elements we have still to mention. To work is not a universal inclination. To get the average man to work requires motivisation. To get him to work much and effectively requires specific inducement, which adds to cost. The knowledge and skill of the worker has to be realised. How much knowledge and skill has the workman put into his work, expressed in terms of money. Ability is a rare quality, what price shall we put upon it? The care and worry of a business man must be recompensed. Personal trustworthiness is a *sine qua non* in business. How are we to appraise it? What monetary concession do we award for its presence, and what pecuniary penalty do we exact in its absence? We can see, then, what an exacting task is involved in fixing economic values. Even to differentiate the elements is no easy task. But if we consider that all these elements enter directly or indirectly into the valuation of every separate commodity, and that in ever different proportions, the complexity of the problem will be realised.

We see, then, various subjects of valuation may be classed as (1) forms of force, organic and inorganic; (2) antecedent and subsumed conditions, mostly reversions

—that is, the constant tendency or effort of nature to return upon her previous self through natural decay, active waste and the recrudescence of noxious life, animal and vegetable ; (3) conditions pertaining to all industry, such as natural monopolies and the protection of the state generally included under the form of rent and taxes ; (4) accumulation and inheritance in the form of capital, inherited or acquired, current or fixed in the soil, or in some other permanent form ; (5) isolated or exceptional contingencies, such as risks and losses ; (6) the personal equation—that is, the knowledge, skill, ability and character of industrialists. We perceive we value a series of physical and psychic phenomena, and we value them in not less than two ways—first as particulars, and then collectively. If it is true that all production is production of individual commodities, and the valuation of these products is primarily an individual valuation, it is no less true that there is a common valuation determined not by particular but by general conditions. It is a dual movement, the individual transactions making up the common value, and the common value re-determined on wider conditions (demand and supply), reflected back upon the particulars.

Having seen “what” we value, the “how” we value, the grounds of our judgment, the *modus operandi* of valuation, falls next to be considered.

The complexity of the appraising process is reduced or simplified by the fact that it is seldom individuals are called upon to estimate the absolute inherent value of any finished complex in production. Commodities are either natural substances, and therefore independent particulars appearing for valuation on the very threshold of production under the simplest and easiest conditions of appraisement, or they are complex productions, every detail comprising which, and every successive stage in the manufacture of which, undergoes an independent valuation. Each contributor to a productive process values his own contribution first, and passes it on to his successor. That successor begins where his productive predecessor left off, adds his own individual service

to it, values the conjoined production, hands it over to a third, who repeats the process, which is continued until the article is complete, and thrown upon the market, a complex, with its final price ticketed upon it in terms of money. The numbers of these specific and independent stages of valuation are often very numerous. They are numerous even when the elements of cost are consciously present, but they are still more numerous when we look at the composition of some of the isolated particulars in the process of specific production. For instance, all productions must include cost of carriage of some kind. What do we include under cost of carriage? There is storage, cartage, railway rates, freight, handling, loading and unloading, insurance, interest on the involved capital temporarily locked up. Every one of these separate contingencies are independently valued. A package is conveyed fifty miles by steamboat. Imagine what an elaborate process of calculation is involved in fixing the rate. What is a definite, isolated and completed particular to one producer, and is received as such, to the person giving it to him is first a long abstractive process, and then a division of the results of that process into minute fractions. No stage or process of production takes place without this process of unification, this mergence of plurality in a higher unity, that is, a higher industrial unity. Just as in distribution the converse process, segregation, takes place. It is the same way in valuation. Valuation reflects all the processes of production. There is the generalised valuation of each particular. There is the conjunction of the valuation of many particulars into one in which these several valuations first merge, and then lose their individuality, or rather their particularity. The process is repeated again and again in ever new combinations, until the early or initial valuations are so distant in ordered process that they become indistinguishable, and therefore not consciously calculable.

We have said we have no strictly scientific formulæ by which to precisely value even the simplest forms

of physical labour. But we have a system based upon experience by which in a general way we approximate results. Under this mode how do we reach results? It is by comparing personal experiences with each other, and with the common experience. If a person produces all he consumes he has no notion of the economic value or market price of his labour. But the moment he goes to the public market to buy or sell he has the problem of valuation thrust upon him. He finds he must exchange his product on the general principle of equality of advantage or sacrifice as between buyer and seller. Take the simplest experience. An individual produces some utility. He is conscious of the exertion he has expended and the privation he has endured in the efforts. He feels entitled to compensation. In fixing a price he turns to the experience of others who have produced a similar or like article. He asks also the opinion of the buyer; how much will he offer for it? The buyer has not made the same article as the one offered, but he has produced one resembling it, or he knows the price his neighbour has bought a similar article for. Thus we have a single transaction approximately valued if the buyer and seller come to terms. A few such transactions form a valuation hypothesis, a nucleus of value. Subsequent traders start with this tradition before them as the basis of their bargaining. Many transactions constitute a trade and form a common estimate or market price. As production of that article extends, the basis of comparison becomes wider and truer. Not only do individuals compare their estimate with individuals, but districts compare their valuation with districts, and countries with countries. The press and price lists recognise the article and record the world's opinion of its price. Finally its value settles down as a specific judgment of the public opinion of the world.

There is still another circumstance of verification of value. The product is consumed, the desire gratified or the service rendered. In this realisation there is

another opportunity of comparing the sacrifice made and the benefit obtained. In nearly all forms of consumption or utilisation, the question is put by the individual to himself: Have I obtained value for my expenditure? If not, the experiment will not be repeated. And this constant verification of value in the result is the most potent factor in determining values and prices.

The above statement may be said to be a description of the process of valuation from the psychic side, from the side of consciousness. Let us just reaccentuate the fundamental notion underlying it. Utility is the universal in production. Price is the universal in value. Now, price is quantification. It is definite numerical quantification on a scale of weight. So much weight of gold for a given quantity of value. These are the two mathematical processes involved in price. There is the quantification of the article to be valued. There is also the quantification of the price put upon it. Now, if all the utilities to be priced were of the nature of physical force, there would be nothing wonderful in the conception of value expressed in an equivalent of another form of matter obtained under parallel or identical conditions. But far and away the most important constituent elements of production, and therefore of value, are not forms of physical force. They are forms of the most subtle psychic power and experience. What more of the nature of the spiritual than the nameless something which gives character, truth and beauty to a work of art, say a porcelain vase? In what figures are you to value the sense of confidence in the power and probity of a trusted agent? How little there is of physical relativity in the hourly summarising of remote and complex contingencies. Or who is to quantify the services of eye and mind in the designs of a steam-yacht? Yet all these truly and purely psychic contingencies are every hour of the day appraised in terms of money, are definitely correlated to specific weights of a certain metal. In our analysis of the elements of value involved in production, we found therein both

psychic and physical elements. And elements of such wide experience as to embrace all the categories. Now, in so far as these categories are involved in the processes and results of industry, they are subject to this law of quantification, this appraisalment in terms of money. Forms of experience which we do not quantify or attempt to quantify outside of industry, inside of industry we attempt and succeed in quantifying. Indeed, we make this process of quantification a test of economic phenomena.

We value that we may fix a price. We fix a price that we may sell. A sale means the successful reconciliation of the antagonistic interests of buyer and seller. Price is an equilibrium of opinion. It is a judgment receiving the consensus of the two parties affected. As a general rule, prices of commodities have a natural level, toward which and to which, when not perturbed, they naturally gravitate. That level is the cost of production to the final seller, with his own profit added. We say final seller, by which we mean the last hands through which production passes to consumption. There are many intermediate sellers and intermediate valuations, but as the public only buy the finished product, all intermediate stages and valuations take the ratio of value from the ultimate transaction. It is evident to fix this final cost of production determines the limits of downward prices. No person can continue to produce at a loss, or will continue permanently to produce on an insufficient return on his capital and inadequate reward for his labour. At the same time, the prices of all commodities have an irresistible tendency to come down to this natural level. All production starts originally at a higher price than it ultimately gravitates to. The reason is evident. Production is ever increasing in efficiency and is ever cheapening itself. Every new form or process of production is a discovery or invention. A discovery or invention is a personal matter, appertaining to the individual who makes it. It is therefore of the value of a personal monopoly. It is known only to the dis-

coverer and those to whom he chooses to communicate it to. If he chooses, his monopoly is guaranteed to him by law for a term of years. If he does not choose to patent, he may rely on the confidence and honour of his friends and employees. But, in any case, the circumstances of industrial life tend to prolong a personal monopoly. It takes a long time for a new industrial truth to percolate through the rank and file of industry. Until the knowledge constituting the original personal monopoly is public property, free to all whom it may concern, there is no competition, or there is restricted competition. In either case the price or prices of that form of production will remain above the natural level of prices. An inventor fixes his prices, he does not calculate them. He is in sole possession of the field. He asks as much as will satisfy his desires with the least amount of effort. But when the restrictions on this natural personal monopoly are removed, the competitive process sets in, the real competition of unfavoured personal industrial effectiveness, and never ceases until the natural level of prices is reached, which is what the individual conscience under the correction of public opinion regards as the just reward of his labour. Prices gravitate to their natural level, and the impelling principle of the trend is unrestricted competition. Under no other conditions than this freedom of industrial energy, and this free knowledge that makes for freedom, can the restrictions which prevent prices falling to this natural level be removed.

CHAPTER XIV

DEMAND AND SUPPLY

WE have said that price is a consensus of opinion upon relative value. That is a conscious relation. It might lead up to the opinion, and often does lead to the opinion, that prices are matters of arbitrary decision depending wholly upon the will, the wishes and the personal interests of those concerned. But underlying this conscious relation there is the operation of natural law—laws pertaining to the production of commodities themselves, and which determine independently of consciousness the conditions under which and on which commodities are interchanged. Price is an equilibrium reflecting an antecedent equilibrium—an equilibrium of action, of natural forces stereotyped or arrested in material forms. This equilibrium is generally described as the law of demand and supply. Demand is not a law; it is a force. Supply is not a law; it is a concrete fact. But the interdependencies of these phenomena are laws, such as that the one creates the other, that they gravitate to equilibrium, that their equilibrium constitutes one price, their perturbation a different but still correlated price. Now we say, apart from all process of conscious or volitional valuation, the demand and the supply of commodities themselves adjust prices, and they adjust prices by previously adjusting themselves. The commodities must be produced, and must be sold to satisfy the wants of those needing, anxious and prepared to purchase, and determined to be supplied. If a person cannot purchase what he requires, he must start and make. The world makes the demand, and can increase, limit, modify or stop that

demand by considerations of interest or prudence. Industry supplies the demand, but can limit, modify or stop that supply when selling at a loss or when inadequately remunerated. Thus the equilibrium of demand and supply of commodities determines that consensus of value which, reflected and signified again in price, we describe as the natural level of prices.

But suppose demand and supply are not equal, or at all events not exactly equal—suppose there is a demand for a particular production which at the moment cannot be supplied, what happens? There is more required than there is at the moment in the market. If producers had time, every buyer would be supplied. In the meantime, the demand must be brought down to the supply. The failure of adjustment is on the part of supply. Some of the prospective buyers must remain unsatisfied. There is not enough in the market for all, and two persons cannot possess at the same time one and the same thing. Who among the rival purchasers is to be satisfied? Obviously they must be satisfied in proportion to their necessities. The greatest needs must be satisfied first, the others following according to the relative importance of their requirements. The least important or superfluous demands ought to, and in point of fact will, remain out in the cold and remain unsatisfied. This is simple justice. It is true economic policy. It is according to natural law that the greater forces and interests transcend and take precedence of the less. How do we determine this order of true economic necessity? Obviously by the price individuals are prepared to pay for the objects that satisfy them. The greater the need, the more the individual will pay, and in general can afford to pay, for its satisfaction. Thus the greatest need is satisfied at the cost of paying the highest price for it. All others follow in due proportion until the supply is exhausted. Those left unsupplied are wants or interests of the least importance, or which can turn in other directions for their satisfaction.

Thus the first consequence of the preponderance of

demand over supply is a rise in price. If there are more buyers than sellers, the price must rise in their mutual competition to supply their respective needs. The rise in price is a consequence, not a cause. It is primarily a consequence, but in the next stage of process it becomes itself a modifying force, that is, this effect becomes a secondary causation. A rise in price may have one or other of two effects, or some of both. The increased price will in the first place lower the demand for the dearer articles either temporarily or permanently. Less of the article will be used. Sometimes it is found that all can be dispensed with, its use under the experiment of necessity having been found a redundancy which only negligence or ignorance continued in use. The consumption or use of the article may be postponed to a more convenient season and lower prices. Another substance may be found to do the work or fulfil the purpose as well as the article now enhanced in price, or at least as well as the new difference in their respective cost would justify. For instance, suppose there is a scarcity of wheat, with a corresponding rise in its price. Still, the want that arises upon the wheat scarcity is not absolutely unsatisfied. Oats and maize are more largely used. Forms of food that cannot be used in their natural state are made nutritious and palatable by artificial processes. A distinct and different class of dietary comes into use. Pease, beans, potatoes are now used where the diet before was exclusively wheaten. Thus the first effect of a rise in price is a reduction of the demand. The other effect is that there is a call upon the surrounding, or, if the crisis continues, upon distant sources, to swell the local crux of supply. In modern times, unexpected or sudden demand has been greatly, indeed profoundly, modified by a greater range and choice of substances, by a wider area from which to gather, and greater rapidity and precision in mustering supplies. If the demand is permanent or likely to be permanent, it only takes time to make demand fully satisfied. Not only will the high price attract the requisite number of

producers, but there are always persons prepared to turn their energies and capital into an even ordinarily remunerated channel.

The other form of perturbation is when the supply exceeds the demand. If all the supply in the market does not find purchasers loss must fall upon the holders of the unsold remanent. The loss cannot be less than that of rent, the interest on the capital suspended and the profit following upon lost opportunity. It may also include waste, loss of freshness and fashion, inherent decay resulting in absolute destruction of the commodities themselves. But apart from these considerations some must sell. They have financial engagements to meet, and they can only meet them through the payments made for their present holding. A competition sets in among sellers to get out of the threatened *impasse*. Among some it is imperative to sell, among all the others it is desirable. If all could hold off until the market steadied itself, or after the market was filled, only interest, rent, and probably some waste, would be the penalty entailed. But the necessities of the few added to the interests of the many rush the market. A sacrifice in price must be made ; it is inevitable. Who is to be the greatest sufferer ? There is a great difference in the steady rise of legitimate demand and the abrupt fall of over-supply. The one is preliminary to production and to the engagements of production, the other involves the labour and capital already expended and the engagements already made. The greatest sacrifice must be made by the seller or sellers who must sell. Those who are not compelled to sell can hold off until the market rallies. The measure of the seller's necessity measures the extent of his sacrifice. The extent of the fall in price gauges the necessities of the dispoinee. But with the first fall in price the first movement is made to diminish the supply and restore the normal equilibrium between supply and demand. Commodities are held back ; production is restricted or suspended. If the fall in prices continues below the

cost of production capitalists may leave that branch of industry and seek elsewhere more remunerative reward for their labour and capital. Thus supply is again co-ordinated to the amount of the demand. There can be no permanent discordance between the wants of society and their satisfaction. Neither can there be any permanent form of unremunerated service. There is dissonance between demand and supply and dissonance in remuneration; but they are only temporary and evanescent. The world returns always to its great main movements on its own great lines—equilibrium, just adjustment, average. Prices are the warnings of danger, the indicators of returning confidence. They indicate over-demand or over-supply. They likewise show the point of reconciliation. But demand and supply *must* be made to balance, not only ultimately but at every present moment. Prices rise until there are no more buyers and fall until no more can afford the sacrifice of selling. Thus there are two phases of prices—the prices representative of the static movements of production, which are the cost of production, and the prices of the moment, which reflect the temporary exigencies of the time and place. There are prices governed by the movement and prices determined by the moment. It is the prices that are determined by the movement that are under natural and inexorable law, and it is to those prices, despite all temporary perturbations, the prices of production ultimately return. The alterations in the prices of the general movement are slow, silent and slight, so much so that only the slightest ripple is on the surface to attract notice. The changes of a casual and evanescent character are rapid, capricious, violent and soon over.

We have said that prices are determined finally by supply and demand, and that supply and demand correlated to each other operate under law. When you examine these laws you find they are either natural laws—laws physical and laws moral—or conventional laws applied to economic operations. It is important

to mark the distinction between the natural and the conventional laws for this reason. There are two classes of industrial phenomena—the necessary and the only desirable—and these two classes of phenomena are governed by different sets of laws. The necessities of industry are governed by real, imperative, unalterable laws—laws natural and moral, to which we all must bow. These cannot be suspended or interrupted. They are a part of things. Man must eat to live; he must work to eat. The law of necessity is there. His wants and their supply must meet, must be correlated. The law of equilibrium stands there. His wants must not exceed his supplies, nor his supply his wants. The law of parcimony rules there.

The second class of industrial phenomena, that which embraces the desirable only, is under conventional law. It is governed not by necessity but by taste, fashion, convenience, advantage, only limited by the power to purchase. No person can consume more than a strictly limited quantity of the necessities of life, but luxuries have no limits to their production and consumption other than the money required for their purchase. That this is true, and not only true but fundamental, is shown by the fact that a scarcity or failure of the necessities of life is followed by a rise in their price and a fall in the price of all other commodities—commodities that are among the redundancies and adornments of life—while, on the other hand, a rise in the price of merely desirable things does not affect the price of the articles forming the fundamentals of subsistence. Unlike the necessities, desirable things are not essential to life. In the past, and at the present day, the mass of mankind labour only for the necessities of life. Many live amid luxury, and with the power of unlimited expenditure, and are yet content to live on conditions of subsistence approximate to real necessities. We could conceive a condition of society in which the expenditure on luxuries had no place. Desirable things can only be produced after all the necessities of the world have been provided for. The

non-essential character of that large part of production is reflected in the evanescence and constant change in its volume and character, as contrasted with the stability and constancy of the essentials of life. Look at the pictures of fashion and the accounts of the pleasures of life sixty or eighty years ago and we can hardly realise them. Yet our bread is still made of the same material that satisfied the hunger of King Arthur. Now, though law pervades the gratuitous and superfluous in industry, it is conventional law; it is law of that obscurity, diversity, elasticity and superficiality appertaining to those personal moods and commotions which characterise human conduct generally, or, at least, human conduct released from the fear and responsibility of pressure upon the means of subsistence. The essentials in industry are correlated to inexorable natural law. The non-essential is superimposed upon these, and is governed by those influences and determinations which fluctuate within the limits of the personal and the will-free.

We return again to the idea that prices are determined automatically, without consciousness, and in defiance of the will of industrialists, under the laws embraced under the process of economic demand and supply. We find these laws are ultimately as of three: necessity, equilibrium, and parcimony. Necessity is the impelling and conditioning power, the binding tie to the natural world and to the reign of absolute law. Equilibrium is the perfect adjustment of the correlation; it is therefore just morally and wise intellectually. Parcimony is the mode or road to equilibrium. It is the shortest, surest and most economical path. Demand is necessary. Supply is necessary, but no unnecessary demand and no over-supply. Equilibrium is their point of reconciliation, their wished-for static relation. And parcimony is the law that narrows over-demand and crushes out the waste of over-supply. A demand which cannot be supplied is as great a waste of human energy as a supply that meets and satisfies no demand.

Both are matter and force out of place, not wanted; and therefore wasted. They are phenomena out of the line of nature's true or nature's timeous adjustment. They are wasted, and in being wasted they perish for ever; they have failed to gain through industry the world's advancing synthesis.

CHAPTER XV

OF ECONOMIC CERTAINTY AND PRECISION

WE may say then of value and prices they are determined from three and dissimilar sources. They are determined from the side of nature by the laws underlying demand and supply. They are estimated by human experience from the standpoint of prices. They are finally, though at present only partially, fixed from the side of science. We mean by science formulation and precision, that precision we describe as scientific precision following upon exact formulation. This last strictly logical process is only in the potential stage. We ought, we can, and we will determine prices on scientific data, logically treated, and rigidly and precisely applied. A great deal of the accuracy of the present empirical method results from that measure of precise treatment which has already crept into industrial process. The ultimate realisation and application of scientific methods to the whole of industry is the goal of modern industrialists, and we see it is in sight. The past of economic phenomena was determined under natural law. The present is determined by experience without science. The future of industry will be governed and guided by the scientific spirit working by scientific methods on scientific lines. We propose in this chapter to show the advantages and the progress already made in introducing precision and precise methods into industry.

J. S. Mill says somewhere in his work on Political Economy that the laws of that science while certain are not precise. That was true in his day, and it is largely true yet. But if it was Mill's opinion, and it

seems to have been his opinion, that the laws of political economy are in their nature certain, and in their nature inherently unprecise, then we traverse his statement. It is an unscientific assumption. We believe that political economy will become an exact science, that it will be characterised by precision as well as by certainty. We have encouragement to hold this opinion in the experience of all the other exact sciences. None like Minerva sprang full armoured from the brain of Jove. Every one of them passed through a tentative and unscientific stage. At every stage there were prophets who announced that these ultimate problems were insoluble, and that they had reached the limits of knowledge. Where are these prophecies now? Where the prophets are, in oblivion. And so with economics. Why, the science is only a hundred years old; and much has happened since. We believe economics will enter the domain of the exact sciences; industrialists doing consciously and intelligently, precisely, and in the fulness of knowledge, what they now do blindly and under a mist of ignorance.

But it will be said if demand and supply and the relations of these phenomena reflected in price are under inexorable law, of what use is expiscation and the conscious application of intelligent methods to industrial process? We may say, to begin with, that the scientific treatment of industrial phenomena does not exist at the will and discretion of industrialists any more than it could be accomplished by industrialists themselves alone. Even if industrialists were willing that their field of activities should remain clouded by doubt, the scientific spirit would still seek to formulate their activities and judgments for them. There are other interests in the world besides industry and other problems, and for the sake of these other interests and other problems the searchlight of science must be applied. To return, however, to considerations appealing to the practical industrial mind, we say that operations or movements conducted under unknown and unrecognised laws effect their ends at a terrible

sacrifice, which in economics means a terrible cost. An intelligent calculation is a different thing from a vague guess. An under-estimate is a disaster, an over-estimate nearly as injurious in the long run to ourselves and immediately to our neighbours. As a movement conscious formal purpose anticipates the same ends, achieves the same objects as blind natural laws or force do, and does it quicker, more timeously, and on a vastly less expenditure of energy. Even if these conscious ends are not for the time being in true alignment with the purpose underlying nature the alienation is only temporary, it is the sooner accentuated, its discordance the more effectually exposed, and a remedy the sooner and more effectually applied. In non-scientific industry it is a hit or a miss, a great failure or a great success. In scientific industry, industry conducted under the fulness of knowledge, it is a deliberate advance to an assured, though reasonable, success. There should not be, and there need not be, any failures in business. Many sections of a successful business do not pay in themselves, though the business pays as a whole. It is useful to know what to shed in the individual's own interest. But it is still more important in the interests of others. Such underselling, the result of ignorance and lack of method, does grave injury to legitimate traders in the first instance, and when the illegitimate trader collapses, or ultimately discards these non-paying features of his trade, the general public suffer from the consequent inadequate supply and excessive prices. In the same way in national industry it is just that all branches of business should be remunerated on an equal or approximately equal scale. We mean that no trade should be rewarded beyond the nature and amount of the service they render the community. Now we are not prepared to say that is secured at the present time. Wages and remuneration are still largely determined by the efficiency of the pressure brought to bear upon the other side. A more exact knowledge would enable us to distinguish between just demand and social pressure. But at all events increased

precision in any form, if not an adequate determination at the moment, is always progress in the desired direction, and is forming some scientific basis for the current empirical and personal judgment.

Just a word as to what we mean by scientific precision as applied to economics. It is evident it cannot mean that every transaction of business is on every and each occasion to be calculated out on a basis of such precision as, say, the precession of the equinox in astronomy. The precision of business can, at the most, be a precision super-imposed upon a still more strict and exhaustive scientific process. It is sufficient if a strictly scientific determination has been reached, or can again be reached, for purposes of verification. We would say we have reached precision in economics if we can determine with certainty and in terms of quantification equivalent in precision to the numerical terms recognised in the mensurating instrumentation of ordinary commerce. They are two, measures of quantity and measures of value. They are tolerably precise. For instance, in the metric system we have measures of length, area, weight and capacity equal to the delimitation and expression of any possible industrial transaction. A precision greater than that may be scientific or more scientific, but it is not scientific precision as applied to or embraced in industry. Phenomena outside the terms of industry are phenomena outside of industry, are in that indistinguishable borderland the point of mergence with ultra-industrial phenomena. The precision of the terms expressive of value are not so precise as these terms of quantity we have alluded to, yet they are also precise enough to reflect the value of any industrial estimate. For instance, in Britain the lowest coin of the realm is a farthing, and though even that low sum could be theoretically further sub-divided, that coin expresses as low a term of value as industry meantime requires. In the United States thousands of transactions take place every day on a difference of a tenth of a cent, and a cent before the depreciation of silver was equal to the British halfpenny.

So we see that the precision of money terms is always adequate to that of the extent of the transaction. These are measures of quantity and value, the successful application of which to industry predicates precision. It follows though there may be, and there always will be, an unexhausted quantity in the background, its limits so far as they affect industry are known. We know this unknown quantity cannot exceed certain known limits, and these known limits are such as to have no appreciable effect on industry, and can be summarised in a known equation.

To realise the amount of the precise element we will begin with demand and supply. Can we measure demand *per se* and supply *per se*? We certainly can measure industrial demand and supply with practical precision. Take corn, for instance, or breadstuffs, which is a happier term. We know the population of the world and the area of supply. We have a physiological base to start with, as no person can eat beyond a certain quantity, and will not be satisfied without a certain quantity. We have the world's consumption for a long term of years. The world's supply of these necessities, the area devoted regularly to their growth, the average yield, and the power of variation are all matters of comparative certainty set forth in the official statistics of the agricultural bureaus of Austria and America. Our large merchants have the reports of their own agents scattered throughout the world. We may say as a fact that the probable and the actual crop of each year is calculated to within a few hundred tons. Now that degree of precision in comparison with the vast volume of the trade is very close indeed. The difference between the known and the unknown is so small as to be inappreciable. We have not the precise weight of the moon to a number of tons, but the unascertainable element is so small in relation to the known that we admit our calculations to the reputedly exact. Or a better illustration is the tides: They are calculated with theoretic precision. Failing certain known perturbations, the time and the height

of the tide in all parts of the world can be foretold. Yet, as a matter of fact, there is a variation from the formulated time and height nearly every day. But the average, or rather undisturbed, results always come out true. Now these tide-tables we class among our exact knowledge. And it is that kind of exact knowledge we claim for much of industry. This amount of precision in demand and supply has already been secured in the main production of agriculture, such as corn, tea, etc., in the main materials of manufacture, such as cotton, linen, wool, etc., in our mineral output, such as our tonnage of coal, iron, copper, etc., and the ounces of silver and gold. In all these, transactions are taking place every day, based on the accuracy and precision of the figures giving the actual and normal supply of and demand for these productions. We do not doubt a similar class and character of knowledge of all other industrial productions could be obtained if and when the issues involved required and remunerated its acquisition. It is because in industry it does not pay to formulate so much of the movement rather than its impossibility or impracticability that is the barrier to complete scientific precision.

It will be admitted that the cost of transport and carriage is a matter of very precise delimitation and valuation. Our steam-boat freights and railway rates alike as to weight, bulk, distance and time are reduced to mathematical precision, and stated with as much minuteness and exactness as the recognised numerical terminology of business can give expression to. This brings into precise industry an immense volume of business.

Risks and accidents, averages, that is the exceptional and perturbational as well as the normal and equational, are treated with all the practical exactness of the integral calculus on the one side and the equation on the other. There can be no doubt about the scientific precision attained among these classes of industrial phenomena.

We have very exact statistics concerning the stock,

movements and fluctuations of bullion; as well as of money at rest and in circulation, with all the phenomena of exchange.

The precise cost of all work performed by machinery is a matter in the books of any well-managed house.

We have now a scientific equivalent for energy, a measure of force *per se* in certain instances. To measure the supply, the utilisation, the cost, and the waste of electric energy is the beginning of a process of mensuration in industry which will have far-reaching results in its future precise formulation.

Following upon efforts to formulate the laws of diminishing return and proportioning price to value and scarcity, we have found a law of geometrical ratio underlying and governing them. In the world of industry we find a geometrical factor similar to the laws governing the expenditure of physical energy. A body loosened from a height above the earth increases its velocity by the square of the distance through which it falls. So also is there a geometrical law governing the fall of prices in our supply. If there is not a perfect geometrical decline it is because additional factors are accentuating the natural ratio of fall. These, however, should be easily differentiated and the natural law itself precisely stated. It takes more coal and engine-power to drive a steamer ten knots an hour than five. Increased speed is bought at the price of enhanced cost. But this cost of speed does not advance in arithmetical ratio. Every additional knot is obtained, not at an arithmetical increase of coal but a geometrical. To raise the speed of a steamer from eighteen to twenty-one knots costs several times the amount in engine-power, coal, labour and space than it takes to drive the steamer from zero or rest to eighteen knots. If we remember rightly, it is five times. There ultimately comes a limit of speed where there is no room for further expenditure, and no room to contain further propelling power. This same geometrical ratio between power and results is seen in industry in the price to be paid for necessary commodities during an inadequate supply.

The price rises in scarcity by geometrical steps or gradations. As the last of the supply in the market narrows the price demanded broadens until they negate each other. Some attempts have been made to formulate the inter-dependency between growing scarcity and continued demand. Looking at these scales roughly, we see a general approximation to the geometrical laws governing the expenditure of physical energy. Whether, however, that should ultimately be the outcome or not, it is sufficient to say that this proportionate rise or fall has been formalised, though as yet only by private individuals. That these private and tentative estimates, or rather calculations, have an approximate certainty is guaranteed by the fact that large business transactions involving millions of money are based upon them every day.

Our national statistics of trade furnish us with an immense amount of valuable and precise data. These, when treated under the forms of the index number, yield generalisations and comparisons equalling in extent and accuracy the inductions of the exact sciences. We can demonstrate the social and industrial condition of the people in distant ages with greater precision through the index number than from the bald historical writings that have come down to us. We can also follow with fuller apprehension the social changes and developments among the people in the successive centuries through the same agency. These statistics enable us to differentiate the necessary from the adventitious consumption of the country, which is important. The necessary determines the limits of the adventitious. They come under a different set of laws. The necessary come under physical and physiological laws, the adventitious under psychological. When we reduce the adventitious to formulation we will have laid the basis of real synthesis. Inasmuch as industry is manifested only in results, it appears as though that science can only deal with the past and the present. Yet, as we shall show hereafter, industry is essentially a providing for the future; it is founded on prudence but guided by

prescience. How much of this futurity is inherent, as it is unconscious in industry, remains for investigation. So also does the lines of its projection.

Tentatively, yet still with growing accuracy, can we precise in numerical and material form the quantification and measurement of such psychic force as have entered into production. We value objects, results, and all that has contributed to form these objects and produce these results. All that is in them, all that has left its impress on them, the impress of taste and knowledge, character and ability, we measure by material metal money. Now, though it may be a matter of controversy how we do this, and the amount of precision attained to, and the adequacy of the terms of the expression of our judgment, there can be no doubt of the fact of our doing this. But we only profess to do it in the results and in industry. We must point out the limits of psychic determination. Do we or can we value through price an invention that has perhaps enriched society by hundreds of millions. We do not think we can, but we say that fact does not affect our contention that there is scientific precision potentially in industry in general, and in that department of it specifically affecting values. An invention is an invasion of industry. It has come from without in. It disturbs less or more a great mass of economic phenomena. If a very important discovery, it affects all. As Darwin's doctrine of evolution required the readjustment of the world's whole thought and the re-writing of all its important literature, so a radical discovery in industry necessitates a readjustment of the whole movement. An invention is an exceptional but also passing disturbance. It only really comes under the ordinary laws of industry when it has assumed industry's common experience and lost its character of novelty. We see it is only the established conditions of things in industry of which we can predicate precision and certainty. Until new phenomena have adjusted themselves to all the other of industry, the conditions antecedent to precision are not there. So we say of economic precision, it only appertains to results, and to

results of considerable or long standing. The process of adjustment to the rest of industry must be complete.

If we are correct in our affirmation that psychic force as embodied in industrial results can be measured and valued, its importance as applied to the adventitious and psychological is apparent. Because though in one sense the desirable is not so important as the necessary in industry, in another sense it is more important, as it is the superadded to the necessary. It is the voluntary, the supra-exertion, which constitutes civilisation. To turn then to the scientific examination of the merely desirable in economics is a great step in the formulation of life itself. However limited the results may be, however tentative, they are always steps giving us a broader platform on which to stand and survey the rest of experience.

That desiderated precision is not a suddenly formed calculation. It is a formulation suggested, based and verified by a long, varied and wide experience. It is not or need not be the less precise for all that. Our idea of precision is drawn from the present position of the exact sciences. But we forget their past. We forget the ages of guess, of hypothesis, of working hypothesis, of slow accumulation and verification, and then the final result in exact formulation. In industry we expect the same experience. Precision has not been secured hitherto because industrialists did not see any need for it. When they acquired leisure they devoted it to things they knew nothing about, and which they could not really learn. An ignorant man does not know his ignorance, so these ex-industrialists talked of what they did not know, and avoided all references to the things they did. They said it was shop and bad form. Besides, it has been the opinion of the world to the present day that there was nothing in industry worth precisising, that the real body of truth worthy of scientific treatment lies outside of industry. Thus the man in business said we get on well enough. The man of science said as though there is anything in your dull, prosaic and vulgar occupations which could be of any

interest or importance to us who weigh stars, measure space, and are in personal contact with the Infinite. To secure the desired precision we must have the co-operation of the inarticulate industrial mind on the one side and the formal consciousness of science on the other. Concepts without sense-perception are empty; sense-perceptions without the concept are blind.

We may say, then, while all economic forces, interests and results operate under laws uniform and certain in their influence, only a part of these phenomena are known and conducted under conditions of scientific precision. Also that the amount or extent of the precise element is greater than is generally recognised. It is only when we gather the precise elements together that we have a just conception of their extent. But we go further and make a bolder statement. If we regard the character and nature of the phenomena formulated in industry and by industrial methods it is the most scientific of all the sciences, that being formulated with more or less precision which other sciences do not attempt to precisely formulate and deny can be so treated.

CHAPTER XVI

COMPETITION AND ADJUSTMENT

WE will take another look back on the productive side of industry. What we have to say, however, is not peculiar to production, but is applicable to the whole field of industry. But as we require to state at this place some of the phenomena as related to production, this is as good a place as any to introduce the observations.

We have seen that industry, so far as it is affected from the natural side, is subject to laws quite independent of the human will. We have also said that the personal or conscious side of industry was under conventional laws. That is the affirmation that the reign of law pervades the conscious as well as the natural side of industry. It is evident, however, if only from the fact of making the distinction between natural and conventional laws, that they are not identical in character, and we may further say in range and effect. The primary distinction is that the laws in the one case are inexorable, inflexible; in the other case the laws are modified or accelerated at the will and conscious purpose of industrialists. We may further say that the natural side of industry is the conditioned, the fixed, while the conscious side is the energy, the living movement, the flux within these natural limitations. What we have to say then is of thought and action directed toward the attainment of certain results. Is there in the methods and modes of industry a process or principle of realisation which we can describe as a law, a law characteristic of thought and action.

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There are a number of laws on the conscious side that bear an imperative aspect. We can say as between will and effort and the result that the value of the result is always proportional to the amount of the effort. That the resultant, while it cannot be more than the effort expended, may be less. That economic results require skill, knowledge and ability, and that they are proportioned to the extent in which these elements enter in. That on the conscious side there is more of consciousness than on the natural side. Still these are not precisely the conceptions we have in view. We want a principle governing action, the living active link between the purpose and the result. And we want its complementary, that static, not active, principle which embodies it, in which and under which it operates. We find the first in the *principle* of competition. We find the second in the *condition* of freedom. They are interdependent. For the operation of the principle or law of competition freedom is necessary. Where there is unrestricted competition freedom *is* there. Where there is freedom there *is* unrestricted competition. We go further and say where there is no free competition there is *no real* freedom. This competitive principle presents itself to us in industry in two aspects. Industrial effort is a striving for a goal, a reaching forth. In that sense we have competition without rivalry, without comparison with the efforts of others, the spontaneous output of energy and lastingness. In the other the competition between individual and individual is consciously present. The knowledge that your own advantage is not the advantage of your opponent, that at least some of your own advantage is bought at the disadvantage of another is there. Granted that the ultimate result, that the sum of all selfish interests is truest altruistic interest, we cannot deny that there is a competition of selfish interests more or less pronounced in the struggle.

A characteristic of a law is that it should be universal in experience, that it should be operative not only among the limited class of phenomena dealt with, but among all experience. Accordingly we find the

law of competition characteristic of the organic world below, and the supra-organic world above. It is no less *en evidence* in the connecting link between the two, in industry itself. It is in operation throughout the entire movement, open and transparent. Competition exists between individuals, and in the individual. Each individual bears a relation of adjustment to the industrial movement as a whole, which affects the status and position which each individual bears to the movement. There is collective as well as individual competition, competition between firms, branches of industry, corporations, districts, nations. There is competition in desires and tastes, and in the forms of their satisfaction. There is competition in demand and in supply, in prices, and in the distribution of the rewards of labour. There is competition in effort, in skill and ability, in character and sacrifice, as well as in adjustment to the environment and to the laws affecting industry. There is competition in method and in process, in policy and principle. In fact there is nothing so manifest and all-pervading as the law of competition. It has lost much of the harshness of competition in nature, while it has gained in intensity and keenness. It has not yet assumed the competition of disinterested devotion to truth and sacrifice for others which we see manifested in some other forms of experience. We can see the possibility of progress in that direction.

And we say of competition it is an efficient and sufficient principle. It has a terrible persistency. It meets you on your very entry upon industry, and only leaves you when you drop out of its ranks. Those who have not the energy and capacity to rise remain below. Even then competition does not leave you, for there are degrees of misery. There is only one relief to the individual and society, ever forward. The world's pressure on industry is an ever-growing burden. Population is rapidly increasing. The standard of living is ever rising. The world other than industry is growing in numbers, in services and necessity, and

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in cost every day. So also has the productivity of industry. To those who bear the bulk of the burden it sits lightly. Only that the standard of power and efficiency must be maintained. Let us see the process of maintenance. Briefly, efficiency must get and take its opportunity, and inefficiency must be permitted to fall to its effective status; it cannot rise. Results are the test and the reward. Competition is the mode of rise and of fall. In the majority of cases a relative fall, that is the less able and energetic are passed in the race of industry. Ambition, personal interest, purpose, the fever of unexhausted energy, natural instinct are all urging individuals forward. Competition is not voluntary, it is compulsory. That is, it is compulsory in the sense of securing certain ends and retaining certain states. It is not necessary that the whole of industry should be animated or possessed of a competitive initiative. The competition and rivalry of a few compels the competition of the others. Say a trade has become a "sleepy hollow." Such a thing as underselling, or improving, or reducing profits, or lowering prices had never been heard of in the memory of the oldest inhabitant. A young stranger enters the district or trade with fuller knowledge, more capital, better machinery and abler hands. That district or trade awakens up. They have to do so. They must come up to the standard of the newcomer or lose their trade. To recover their trade they must go a point better. Of course in countries with a naturally energetic and forward population the number of voluntary competitors is greater and more effective. Compulsory rivalry and competition, like compulsory service, is never efficient. When mere retention of the *status quo* is the ambition or the satisfaction aimed at, and not constant improvement and advance, industrial progress lacks swing, momentum. Industry is nature's great classificatory process in everyday life. In industry you stand in the position you have made for yourself or retained for yourself. Advance means active competitive effort. Retention is more of the nature

of successful defence. Favour leads to effeminacy, struggle to strength.

It is as well to notice how competition on the one side, the active and productive side, is responded to by the recipient side. The counterpart of competition in production is on the side of consumption selection. The world rewards only, if it can, the best of service, selects the strongest and most capable workers, demands the most efficient in process, and pays only for the best value to be obtained at the price. Thus selection may be described as competition among consumers to obtain the best value for their pecuniary sacrifice. Buyers compete in obtaining best value in their purchases. There is an existing distinction between the two sets of circumstances, viz., that the money, the reward of labour, is in the hands of the purchasers or consumers. The advantage of that position is well expressed in the term selection, rather than competition. On the other hand, when there are fewer producers than consumers, the power of selection is transferred to the other, the producer's, side, and a real competition, something more than mere selection, sets in then among consumers for the restricted produce.

We say that competition is a sufficient principle. That is, the natural forces, conditions and laws of industry, of which competition is the active or operative principle, and freedom the static condition embracing it, are, when undisturbed and uninterfered with, adequate to all the purposes of industry. Industry free and exercising its freedom is competent to secure all its legitimate ends.

The mere affirmation of the principle of economic freedom should be enough to prove its sufficiency. It is the corollary of the natural inborn liberty belonging to each individual as an individual, as a human personality. That individuals know their own wants best, know the best and easiest means of attaining them, know their own capacity and resources better than any conceivable outside, or indeed inside,

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authority, goes, or should go, without saying. All effective effort must start from within out. But we can appeal to the experience of the world if the fact is disputed. Interference under the guise of guidance is not a new experience or a modern theory. Industry from the dawn of history has been ever trammelled, those outside of industry have ever acted on the belief that they knew better than industrialists their wants and effective methods. The modern history of industry has been the knocking off of the fetters, iron and gold, riveted on industry. And the result is before the world. Industry relieved has achieved for itself and the community in a century more than all the previous efforts known to the history of the world. At the present day the nations that have adhered most closely to the principle of free industry have been and are the most successful and prosperous nations from the economic point of view. Indeed, we may add from the political and intellectual point of view as well. America, Belgium, France, Germany, Holland, Sweden and Britain are all nations in the forefront of industrial energy and prosperity, and are all nations that profess a free industry. It is true that they have not all been consistent in their practice of free industry. Some of them have been much given to bounties and protective tariffs, to favour and restriction in some things, but all of them have maintained freedom in competition and in the general conduct of industry. Germany and America are held up by Protectionists as an example of regulated as opposed to free industry. But, as a matter of fact, protective tariffs are not the whole of industry. They affect a very small part of it. If you observe you will find that freedom of competition, freedom of labour, of corporate association and of economic initiative, are much more keenly valued and maintained in America and Germany than in our own country of Britain. And such freedom more than counterbalances the departure from the principle of free industry in the matter of tariffs.

If an industry pays it requires no extraneous assist-

ance. If it does not pay the community is better without it. An industry assisted is maintained at the cost and to the disadvantage of the rest of the community. We could imagine an immense volume of assisted industry giving a superficial and temporary appearance to the commercial prosperity of a country, while near at heart being injured and weakened by that trade. A mistaken fiscal policy is not easily exposed in the general prosperity of an energetic industrial people. Of course, the pernicious effects and injustice of sugar bounties, and of duties on imported grain, the country itself being a grain-growing country, are easily demonstrated; but there are many other forms of protection, the evil effects of which are not so easily traced. If you are going to bestow a favour or perpetrate an injustice, at least it is only right that the treatment or policy should be applied all round. In these cases, if you have not the justice and advantage of freedom in industry, freedom from pernicious coddling and freedom from unfair restrictions, you would at least have the advantage of the justice of a common injustice.

It may be said that interference, artificial restrictions and favours, in economics is just the application to that phase of life of that process of superior and intelligent anticipation and acceleration of nature's purposes, which operating in life itself constitutes civilisation, and the triumph of reason and conscious will over nature. We answer competition and freedom is that process and condition of anticipation and acceleration *itself*; therefore any interference with that principle or alteration of that condition must be of the nature of disadvantage. Further, they are of true nature's way. They are born of the individual and born in the individual. It is not an external and artificial relationship. You cannot make unrestricted competition more free or more effective. You can only remove obstructions to the operation of that freedom. Interference of whatever character must have some effect. It must be either an advantage or disadvantage. It must be one

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or other ; there is no third effect. Such interference can have only two forms, restriction or special favour. As we have said, you cannot add more competition to an already existing unfettered and free competition. You cannot make freedom more free. If you can enhance competition or increase freedom it is because it has not been a truly free competition and a perfect freedom. If interference, therefore, cannot strengthen the principle of competition and the condition of freedom, as it can only have one or other of two effects, it can only be hurtful and disadvantageous. Our argument is that special favour is like openly-avowed restraint, itself a restraint upon freedom, and must therefore be of the nature of a disadvantage. There is no instance of an action or policy that traverses or impedes a natural law and condition, and we contend that competition and freedom are such, that has not in the end been disastrous. If a nation should perish or a race be extinguished the majesty and supremacy of nature's laws will still assert themselves. Prevention, restriction or favour, suppression or undue stimulation are unnatural conditions, are superfluous conditions. They cannot be permanently helpful ; they must therefore be hurtful to industry. The infinite varieties in power, character, tastes and interests, and the infinite inequalities and proportions in which these are distributed throughout industry in themselves show the superficiality, the inadequacy, the inherent injustice of all possible artificial regulation and interference. The operative and governing conditions of industry must universally pervade, must be inherently in the movement. It must be an inherent growth and influence within, not a superficial imposition from without.

Interference with the law of competition must take the form of prohibition, restriction, or favour, or the suspension of some essential condition of that law. These interferences must come from the outside or the inside of industry. When outside of industry they may proceed from the state or from the public. The former is the most formidable, as it assumes the form of

legislative enactment. The latter can only be the pressure of public opinion, or of associated effort. Mr Gladstone's doctrine of exclusive dealing is an example of the pernicious results and real danger to industry of irresponsible public opinion and action, as exemplified in the case of Ireland. Service stores are an example of non-industrial associated effort.

State action can take the form of total prohibition, as, for instance, the prohibiting of the cultivation of tobacco in Britain, or the paralysing, by a heavy duty, as in the case of the consumption of spirits, tobacco, etc. It often takes the form of favouring particular interests by bestowing bounties and subsidies, or by imposing duties upon imported articles which are also grown or manufactured in the country itself. We recognise that the public wants must be provided for, so that a duty imposed with the mere object of raising revenue, and when all the incidence of that taxation goes to the national exchequer, is no breach of economic principle. Similarly we can imagine bounties given to railways and steamship lines, or other forms of industry, on military or political grounds. These are military preparations made during peace. But for all these due cause must be shown. All favours or restrictions proceeding from the state with the specific object of affecting or influencing the course of industry are breaches of economic law, and are to be condemned as such. They perturb free and equal competition, and they disturb it as much by favour as by restriction. They invade the condition of freedom. No trade is free that is restricted, no industry is free that is bound by, or that depends for its existence on, special favours. The recipients of favour are as much dependants as those that are fettered.

The most serious interference with the principle of competition and the condition of freedom comes from within, from industry itself, and it is that which constitutes their special danger. A restriction imposed from without is always superficial. In virtue of its

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very otherness it is the subject of suspicion and question. An antagonism, or an abandonment of an essential principle within the movement itself, on the other hand, is vital. It jeopardises the industrial movement itself. There are two such breaches of economic law before our mind which profoundly affect industry. They are both in the nature of restrictions. The one proceeds from labour and the other from capital. The one appears as labour organisation, and it is ostensibly arrayed against the masters ; the other appears as an artificial monopoly, and it is arrayed directly against the public.

As to coercive restrictions upon the liberties of labour, they come from the side of labour itself. Ostensibly directed against the masters, these restrictions and tyrannies are exercised against their fellow-working men. So far as voluntary combination of labour is concerned, we admit the right and assert the advantage of these combinations. Legitimate unions, to watch the interests, to gather the knowledge, to formalise the demands, to give the courage to secure justice and resent injustice, are of themselves most admirable institutions. But we do not believe in compulsory or involuntary union. It strikes at the very heart of freedom. We do not believe in the restricting of the numbers of a trade. It is the right of every citizen to choose the line of industry in which to earn his daily bread. We do not believe in absolute restrictions upon the time an individual may work. Fight for the rate of pay by all means, but at that rate let everyone work for as long as his inclination or needs may require. We have not all the same capacity and inclination for work. We have known men work with pleasure ten hours a day ; we have known others tired and looking at their watches half an hour after entering the gate, and had a real conviction that true liberty was idleness. Besides, the extent of their personal wants is not the same. Some have families, others not. Neither do we believe in an individual being fettered as to the amount of work he may

perform in a day. The purpose in the last case is to base the day's standard of work on the efforts of the laziest and weakest workmen in the shop. All these mistaken efforts proceed from two fallacies and one immoral consideration. The first fallacy is that no person should be permitted to take advantage of the natural advantages inherent in him and the opportunities that accrue to him. Trade unions seek to secure that by levelling down. Nature's way is levelling up. In the end nature's way—inexorable law—is bound to win. The second fallacy is that individual and national productive prosperity can be secured by diminishing effort, limiting production. Industrial prosperity is just the amount of work done. National industrial supremacy is just the superior energy and industry of the workers in that nation. Industry is work, not laziness or idleness, and all restrictions upon work destroy the triumph of the industrial movement. The immoral consideration is that certain trades mean to secure a selfish and unjust advantage at the cost of the other trades and the general body of the people. No trade has a moral right to any other reward for their services than their natural value—a value duly estimated and proportioned on the services and labours of the whole body of industry. That value naturally accrues to them through unfettered and undisturbed economic process. As a matter of fact, no trade does ultimately benefit from these mistaken economic opinions and actions. All they secure is a temporary advantage at a terrible ultimate cost. Under restriction of labour the employer cannot find an outlet for his capital, energy and knowledge; that is, the restricting power takes away from the employers the opportunity of finding work and pay for those workers that are excluded. The restriction diminishes the inevitable competition of the masters for workers. The cost to the public becomes out of proportion to the amount of service rendered. Many wants remain unsatisfied, much-needed work is unperformed; finally, the public look outside that trade for a substitute for

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their special production, or they go to another country where freer industrial conditions obtain, and get the article nearer its natural price. It then becomes a question, not of the admission of a few much-needed hands, but the existence of that trade itself in that country. There is no instance of a trade ever leaving a country returning to it again. An industry once started—the capital once sunk in another country—must go on. An unwise restriction upon the economic freedom of an industry may involve the ruin of that particular industry, but the natural law of competition and its correlated conditions of freedom will assert themselves.

The other clamant evil is the creation of artificial monopolies through which the members of a trade can restrict output and raise prices above the natural value of a commodity. This proceeding involves two separate issues. To secure a monopoly in a large department of trade an immense combination of masters requires to be formed. These immense amalgamations are a feature of recent years. The first question is, are there any economic advantages in these huge undertakings? Do they economise labour, superintendence or capital? We might say, taking an analogy through nature, that these huge forms, like the extinct mammoth or megatherium, though a development to be expected from the reaction against small masterships and petty trading, err on the other side and are doomed to failure. They are framed on the exceptional genius, energy and courage of a single or a few master minds. No undertaking depending upon a continuous and properly-adjusted supply of genius can be lasting. The permanent in industry must be able to be conducted on an ability superior to the average of mankind, but an ability not rare or exceptionally circumstanced. But we have another objection to these gigantic combines, or, rather, doubt regarding them. The strength of a chain is the strength of the weakest link, and as the chain lengthens the sooner a weak link is likely to develop itself. A commercial undertaking is just such a chain, and a chain on which there is a constant strain,

and when a link breaks the chain is parted. If many links break the chain is irrevocably broken up and has again to go through the melting-pot. Our largest trade undertakings of any standing are our railways and our joint-stock banks. Their success lies in their static character, the simplicity of their operations and the uniformity of the economic phenomena treated. Yet in these simplest of undertakings we remember of such catastrophes as the failure of Overend, Gurney & Company and the City of Glasgow Bank. We read also the other day of frauds perpetrated on the Bank of Liverpool, involving a sum of £190,000. We remember also our railway experiences, such as the North British, the London, Chatham and Dover, and many other similar undertakings. If these disasters take place among the simple and permanent of industry, how much more dangerous to themselves are huge undertakings subject to constant change within and meeting constant change of circumstance without? So far, then, as the ultimate success and economic prudence of these industrial leviathans are concerned, we have no manner of doubt they will all pass away.

It is not, however, in relation to their economic success or failure that we treat of them. We view them with dread because they are monopolies, monopolies artificially created, and as monopolies violate the first principles of economics, and are social not less than economic dangers. We have shown that the real fact of operative industry is competition and freedom. Now a monopoly destroys competition and is the negation of freedom. Remember it does not fetter them or modify them, it destroys them altogether. Who is it that the monopoly is established against? It is the consumer, the world at large. And what constitutes the competitive principle and the condition of freedom on the consuming side? It is choice, the power of selection. In the case of an established monopoly there is no choice, there is no power of selection. An economic right appertaining to buyers is destroyed. Our objections, then, to monopolies are that they destroy

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competition among producers, and destroy the power of choice upon the part of consumers.

These monopolies bring many attendant evils in their train, as all immoral movements always do. They gather around them dependent interests whose existence or whose advantage are bound up with the existence of the monopoly. Even more dangerous is the fact that they outlive the memory and indignant sense of injustice of the public. The public know they are wronged. At first they kick, then they grumblingly acquiesce, finally they accept. It has always been so in our memory or in our time say the younger generation. Could there be anything more dangerous than this training of the public mind to sit still under injustice, and industrial and national danger? Then they are over-capitalised, and the public have to pay monopoly profits and monopoly interest, not only on the original cost of the undertakings, but on the large, often vast expenditure attending the buying up of the trade and the establishment of the monopoly. Suppose the original capital expended on establishing a trade is £1,000,000. The interest on that sum at 10 per cent. is £100,000. But to buy up all the particular undertakings in the trade will take not less than £5,000,000, probably more. Assuming these figures, 10 per cent. on the new capital is £500,000 annually. But the bosses engineering the combine had no intention that their labours should be rewarded on the lines of ordinary business profit. No, they meant it to be a real good thing for themselves and friends, especially themselves. They mean to have, and probably will get, 20 or 25 per cent. on the capital involved. The public for the same service that they formerly paid £100,000 annually now pay £1,000,000 or £1,250,000 annually. All such transactions are economic dangers and social wrongs.

We have another observation to state. There is a true interdependence between the essential in industry and the essential in society, between economic and social law. It follows that a real breach of economic law involves at the same time a breach of social law.

This is important, as it implicates that, other considerations than purely industrial interests being affected, a necessary remedy may legitimately come from outside industry, not on industrial but on social grounds. Industry is a limitation upon ordinary experience. But it is a limitation within, not outside of, that experience. The fundamentals in industry are the fundamentals in all experience. The principle of competition and the condition of freedom are as applicable to all human experience as they are to industry. There is a wide distinction between the fundamental in industry and the characteristic in industry. The characteristic of industry is peculiar to itself. The fundamental is not. Thus, when industry merges in the common experience, or rather meets the common experience, the point of contact assumes a form which has received its character from the outside of industry. That is, where industry and common experience meet, you have on the one side the industrial aspect and expression, and on the other its social form and expression. We say that essential economic error, involves among other things social injustice. Take, for instance, state bounties, forms of favour to certain departments of industry, they traverse the principle of free competition. That is the economic error. View state bounties from the social side and you will see it is a breach of equity. It is inequality before the law. One section of citizens are unduly advantaged by the state. That is one wrong. Another is that this advantage is conferred at the cost and to the disadvantage of the other unfavoured citizens.

Restrictions upon labour are limitations on economic freedom on the one side, and they are invasions of the natural, social and political rights of those against whom the economic restrictions are directed on the other. That is not a matter of theory. It is a patent fact that the economic wrong not only accompanies but constitutes the social injustice.

Still more marked and important is entire denial or total suspension, or rather suppression, of an essential

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economic principle as we have shown monopolies are. Monopolies are a suspension of freedom within and a denial of freedom to those without. Monopolists claim a right not conferred by industry and repudiated as a wrong by society. It is a delusion that any economic principle can impair or imperil any social right, or that individuals through industry can acquire a right, to perpetrate a social injustice. It was never recognised this right of private individuals to combine in restraint of trade. The only recognised authority to exercise restraint is the state, as the representative of the whole community. If an artificial monopoly is effectively established the enhanced profits are not legitimate industrial gains. They are not the results of labour or the reward of capital. They are an illegitimate robbery of the wealth of the community, extorted through associative coercion. It is the duty, not less than the right, of the state to either remedy the injustice or secure for the national exchequer for public purposes this dishonestly appropriated gain.

The problem stands thus. An economic error has produced an economic grievance and a social wrong. In applying a remedy are we to attack the economic grievance or the social wrong, are we to appeal to industry or call in the aid of the state, is the remedial effort to emanate from within or come from the without of industry? And here we may say at once we admit the right of the state to remedy any social wrong that proceeds from, or has arisen out of, any industrial action or policy. In fact, in the cases of bounties, subsidies, picketing and intimidation, adulteration, railway rates, etc., the state has interfered in economic matters bearing a social or political aspect. Still, in the case of these great amalgamated monopolies, we would pause before invoking state interference. Such monopolies to be broken up by the state would require the state to assume in certain cases industrial functions. Furthermore, to appeal to Cæsar would be a confession that industry and industrialists were unable to fight out their own salvation. Think what that means. That private

freedom in its freest and most characteristic development is a failure. We say, then, not only for the sake of industry, but in the world's best interest, let us seek our remedy from within. And we do not doubt of success.

Industrialists have two resources to fall back upon. The one is the economic circumstances of the case, and the other is the patriotism of the people. We cannot imagine that the largest amalgamation in industry can secure the permanent command of all the materials of a trade, or can keep in their employment all the ability and knowledge of that trade, and still less of the country. Our greatest economic wants exist as materials in the greatest plenty. One of the professed advantages of these huge monopolies are their savings or economies in superintendence. That means that they turn loose from their combinations a large amount of ability and knowledge to seek employment elsewhere, and to become, if opportunity offers, not only their rivals but probably their enemies as well. At all events there will be no love lost between them. In the event of a new private undertaking entering the field, they will only require remuneration on the natural and normal capital required in the trade. Thus while they (the newcomers) are earning a return of 10 per cent. on their capital, the monopolists will only be receiving a return of 1, or at most 2, per cent. on their watered stock and inflated capital. So far, then, as the ordinary business aspect of the case is concerned, there seems no reason to doubt the adequacy of industry to meet this crisis.

We rely also on the patriotism of the people. If there has been a weakness in the industrial movement, it is that hitherto industry has been viewed too much from the personal standpoint. That position is being modified. There are a growing number of industrialists who seek for the conscious sanction and incitement to industry in the sense of duty to their country and society. To these we would appeal to assist in the maintenance of economic principle and the consequent

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prevention of social wrong. These persons must lead and lend their experience and capital to preserve the freedom of industry inside as well as without. Then there is another point where considerations of country come in. Those who have broken up a monopoly deserve well of their country, and are entitled to look for preference in view of their services; all other conditions, quality, price and service, being the same. There *is* a patriotic side of industry.

Though we say we would avoid state active interference, the state might make itself useful in discovering these monopolies and in collecting useful statistics concerning them, to assist those who are conferring a public service. Failing industry, we admit the right of the state to remedy a social wrong.

CHAPTER XVII

SALE AND PURCHASE

WE have seen the process of production and realisation. The commodities are now ready for the market. They have to change hands. They are to be bought and sold. Let us look at the fact of sale and purchase. We prefer the term sale to exchange. There is not now any exchange in the sense of barter. There is no specific interchange of commodities themselves. Just as there is a common measure and a common expression of value, so in the disposal and acquisition of productions there is a common media which we term money. Money is the measure of the value of the commodity sold. It is more. It is a metallic certificate of the discharge of a specific industrial service. This certificate is in its nature a share or portion of the common and recognised power of purchase. Commodities can be exchanged into money and re-converted into commodities. The media is indestructible, and the person receiving it, so long as he holds it, has the power of purchase to the extent of its amount and value.

Sale and purchase is one of the greatest facts in industry, yet, strange to say, it is never treated of as a fact in itself. Yet there must be circumstances antecedent, present and consequent to govern that action. There must be an advantageous sale, a normal sale or that of industrial equilibrium as applied to sale, and sales which are disadvantageous to sellers.

Usually there are two parties, and ultimately there are only two parties to each transaction—a buyer and a seller. Sometimes, however, there is an intermediary of special knowledge and trust on one or on both sides.

Through their superior knowledge these agents are able to be paid a commission by either buyer or seller, and in general leave a better profit for their principals over and above. The saving of the time of the principals is, however, the main reason for this employment of professional buyers and sellers. One professional buyer or seller, or both buyer and seller in one, may represent a hundred principals. This new industry is important in two ways. It limits particular gains and losses, and conducts business on an average and steadier plane. Formerly the idea of bargains, of particular advantage beyond the natural value of articles or their cost of production, was the dominant idea in attending markets. Now buyers and sellers alike are content with more normal profits. In the second place, the establishment of professional buyers accentuates the fact of there being a science and an art in mere purchase and mere sale. There are large branches of business, the greater part of distribution, comprising merely purchase and sale. All the economy of domestic life embraces at least wise purchase, if they have no sale. We may say, then, that all industrialists must sell and buy, that the largest part of distribution is buying and selling, and that all consumers, especially family consumers, are purchasers.

It is a mistake to suppose that any person can buy, or that there are no principles to remember in connection with purchase and sale. A half of the bankruptcies of the country arise from unnecessary or injudicious buying. People nowadays learn to spend money from their infancy. They acquire the habit of spending years before they have learned to earn, and still longer before learning to accumulate. This produces a familiarity with, and habit of, and even propensity toward spending. It becomes an emotion of mind, not a deliberate act of judgment. In the case of our grandfathers sixty or seventy years ago, the possession of money and the opportunity of spending was not the general experience. Among every class of the community now money circulates with greater freedom.

Even the children of the poor receive tokens of their parents' affection oftener in a gift of money than in any form, leaving to the inclinations of the child the form of its own gratification. Among those below twenty years of age money burns in their pocket until it is spent. Thus there is no doubt that the habit of spending, the instinct of extravagance, is stronger and more general now than ever before. This attitude of mind reflects itself among beginners in business. They are generally rash, and even eager to lay in a large stock. They think of every possible need and provide for them on the most liberal scale.

That is a very wrong position. Antecedent to every contemplated purchase, the buyer should put to himself the questions, "Do I require this?" "Can I do without this?" "Is there any arrangement of my present resources that will secure my purpose without this additional expenditure?" If the experiment is tried, it is extraordinary in how many cases our conception of our needs can be modified or abrogated. A characteristic law of industry is the law of parcimony—parcimony in purpose and parcimony in the expenditure and means to attain it.

The next consideration is that the article which we propose to buy is exactly suited to the purpose. An article that does not quite suit the purpose or the taste of the buyer is dear at any money. What a mass of unsuitable as well as unneeded material passes through business men every year. Go to a bankrupt's sale for curiosity. It is a revelation of an inattention to the principles which should govern our actions in purchase. The time must be suitable for buying. There is much unnecessary haste in buying, articles are bought before they are needed, they are purchased suddenly on the spur of the moment. There is also an opportune time to buy, on the completion of the crop, or at the beginning of the season, as there is a danger in getting loaded just before the new supplies or the new fashions come in. The place or the number of the markets is important. Special localities have their special privi-

leges and advantages. There is frequently a choice of markets. Lastly, "Is the commodity worth the price to you?" It does not follow because an article is desirable and offered at a fair price, that it is worth that price to you. Anything not immediately needed is dear. We have hundreds of times seen loss arising from yielding to the temptation to acquire what is called a bargain—that is, something which, if you actually needed and needed all of, might be considered cheap, but, not being directly and wholly needed, could never but be dear to you. An article well bought is already half sold.

As for the principles underlying successful selling, treat your customer with the same intelligent and devoted interest and justice you would yourself. "Do unto others as you would that they should do unto you" is one of the innermost secrets of success in business. Regard every individual as a possible and likely life-long customer, who, after further experience of yourself and methods, will ultimately place his fullest confidence and trade with you. Never over-praise or exaggerate the value of an article. Disappointed expectation inspires doubt and impairs confidence. Remember the choice of market rests with purchasers in a far more effective sense than sellers. Make no distinction between the passing stranger and the stranger within your gates. News travels far, so does the potentiality of business, between telegraphs, railways and parcel post. It is the unexpected that always happens, in a friendly as well as in an unfriendly sense. Suggestion or advice given against your own personal interest is never ultimately forgotten by the recipient, it is a good investment. Knowledge of the purpose and accurate use and method of manufacture and construction of the article sold is a great aid to your customer and necessary knowledge for yourself. You can never know and communicate too much. Finally, if there is an inevitable loss on a commodity bear it yourself, do not father it on your innocent customer.

So much for the principles underlying sale and pur-

chase. For the art and application of them knowledge is required, knowledge of the properties or circumstances that make an article useful and that constitute its value. Of this technical knowledge of the practical qualities constituting value, manufacturers and traders are not as a rule deficient. We are satisfied from our own experience that disadvantageous buying or selling arise, not from inadequate knowledge of commodities and prices but from neglect of those principles governing action and affecting judgment. On the other hand, consuming purchasers, that is the general body of private individuals, have a great deal to learn as to what constitutes value and as to what is fair price. A great number of society consider it derogatory to their dignity to know anything about values and prices. They are content to be fleeced rather than stoop to the ordinary knowledge and common-sense of life. Then even in families where the need of good value for their money is much in evidence, they take no systematic and effective steps to form their own judgment and that of their children. Many a girl is married whose mother has never made her an intelligent judge of quality or taught her intelligent economy in buying. No doubt also we all suffer from the absence of text-books bearing upon the qualities and valuations, and the tests applicable to all commodities in use in common life. Not to offend the susceptibilities of the gentler sex, though they are in reality mostly present in our thoughts, as to what we regard as the greatest form of failure in family life, we may say that we have never yet met with a male person who could tell good cloth from bad, well-spun cloth from badly-spun cloth, all-wool cloth from jute and wool cloth, cloth whose dye would last, and cloth whose dye would be sun-browned in a week, or cloth that was good value and cloth that was bad value. In all these things they trust their tailor. They have really forgotten all their former experience, or it passes out of their memory at the time of buying. And if that is the state of the case with the superior sex, or, at least, the sex that is always pro-

claiming its superior knowledge and judgment, we shudder to think of the condition of affairs among the other side.

It is unnecessary to point out that what we advocate is in the private and personal interest of buyers. If personal interest, however, fails to make individuals just to themselves, and we admit that as a rule it does not, the only other course is to appeal to their sense of public duty. To make no distinction between the just dealer and the avaricious dealer, to make the success of the unjust trader not only as much but more than the just trader, is a fatal public policy. Honesty is the best policy, and we must all join to make it so. Indiscriminate purchase saps the roots of industry. It leads to a constant rise of price upon commodities above their natural value. It decreases the volume of trade, that is, it reduces the amount of work distributors are required to perform to make a living. It crowds the shopkeeping class with such numbers and with such enormous profits that they are remunerated on a scale altogether out of proportion to the character and amount of the services they render to the community. The present proportion of the simply distributing classes constitute now a real economic and national danger. That is our first observation. The second is, we see a profound and beneficial change coming over the industrial conception of profit. It is distinctly setting in in the direction of a natural profit, a profit in due alignment and proportion to the average remuneration of service to the community. Persons in business are setting aside exceptional and adventitious gains for the steadier and more satisfying position of a fair profit on a fair value at a fair price. They seek to exclude the exceptional and adventitious. Now we say that in full consciousness of the recent development of artificial trade monopolies. These are only a partial movement in industry. The real industrial movement is gravitating in the direction we have indicated. Now nothing would be so disastrous to this really growing altruistic tendency in industry that this careless extravagance, this uninformed choice,

this superior rewarding of the selfish, the unjust and the fraudulent trader to the disadvantage of the just trader. The very tone of industry is given to it by the habits and example of the society which it serves. To expect a movement of industry on lines of which rightfulness, justice to yourself, your neighbour and society, is to be the keynote, and yourselves, that is, the world, not to set and enforce the example is folly.

CHAPTER XVIII

MONEY AND BANKING

WE come now to a different set of industrial phenomena, to a different phase of industry, independent of production on the one side, and distribution, accumulation and consumption on the other. The phenomenon money is an interposition, an intermediary. It is the watershed of industry. We have climbed the arduous heights of production, and now standing there on the summit of this Mount Pisgah—money—we look along the uplands of accumulation, or down the bottomless abyss of consumption. It is a resting-place on which and at which industrialists pause, that is if they are wise, to determine their next course of action.

We will throw back one more glance at the condition antecedent of money. Money is the metal gold divided and stamped into suitable portions and weights for commercial intercourse. Gold is the preliminary and material of money. It is the measure of value of commodities. But before discharging the function of a measure of value, it exists in industry as an ordinary industrial product. It is sought and bought and sold for its self alone, for its intrinsic value. It is thus a particular commodity among the mass of commodities in general, and is classed as either a necessary or desirable production. Formerly it was only a desirable commodity useful in the arts, one of the luxuries of life, but now, on account of the indispensable character of the functions it discharges, it has become a real necessity of life, through having become a real necessity to industry.

Having become the measure of value, gold has added

to its natural industrial conditions the function of mensuration, mensuration particular and general. Gold measures not only particular commodities but the mass of commodities in general. The whole of the commodity gold is placed in the scale of prices against the whole of other commodities. And what is more, with a little time they come to balance each other. A particular portion of gold values a particular commodity; but the crux of the position is that the whole of gold measures the value and fixes the prices of the whole of other productions. Thus the position of gold is unique. It is one of absolute isolation in industry. It stands not in juxtaposition but in direct contradiction to the rest of commodities.

We may say this further here, that gold is not only an industrial production and discharges an industrial function, but it has created an independent industrial interest. Money and its management has created a new interest, a new form, and a new branch of business. Those who deal in money and manage money are a separate industrial class, having different interests and requiring a different technical knowledge from the other departments of industry. Not only could ordinary business not be conducted without the aid of money, but within the circle of finance itself an immense body of interests and business have grown up amid it, having no other *raison d'être* and no other field of activity than money itself. It is an independent phase of industry which has arisen out of the simple and dependent function originally discharged to one of necessity, complexity and immense proportions. If we consider that money, banking and finance as we now know them are little more than a century old, since the adoption of the gold standard in this country, their artificiality and modernity are no less striking than their growth, magnitude, intricacy and services.

To prove the truth of what we have stated and to fully accentuate the unique position of gold and money, we have to point out that they do not rise and fall in value in the same way and at the same time as the other

of commodities, but in inverse ratio. Surely that fact demonstrates the unique position of gold and money. If gold becomes plentiful *its* price falls and the prices of *all* other commodities rise. If gold becomes scarce its value *rises*, its purchasing power is extended, more of commodities must be given in exchange for it, and the prices of all other commodities are *lowered*. This is a law in economics. So also is the ratio of the rise and fall, to the increase or decrease of the quantity of money. If the whole stock of gold is doubled, prices of commodities are doubled. If the stock of gold was only increased one fourth, general prices would rise one fourth. The interdependence between the price of gold and of commodities is not only real and inverse, but also in invariable and equal proportion.

The term money requires a word of further explanation. The medium of exchange was originally bullion itself. So many ounces of precious metal or such a part of an ounce. But this constant weighing of minute or large quantities was found to be slow as well as inconvenient, and lent itself to fraud. This led to the introduction of coinage. This coinage is what is recognised as money, bullion in current use. The advantage of coined bullion is that in every coin there is a specific weight of a specific quality or fineness, a uniformity of value in relation to the general system of money; that it is easy of recognition and lends itself to rapid handling. But it was found that to transport and pay large sums in metal coinage was a slow, expensive and sometimes risky process. The remedy for these inconveniences was the introduction of paper money as a valid representation of gold money; as a superior and more convenient instrument of exchange, in the form of bank-notes and bills of exchange. It is easier to carry about with you ten £100 bank-notes or a bill at sight for £1000 than carry 1000 sovereigns. From the general point of view the introduction of "paper," that is notes or bills payable on demand, was an economy, as it saved time and the great waste always attaching to coinage, especially gold coinage, in active circulation.

But this "paper" did not supersede real money. "Paper" had always to be paid in gold on demand. It was simply a convenient but evanescent substitute for real money. We may say of all paper money or other substitutes that they have one characteristic disadvantage and one characteristic advantage. They may be forged or imitated. You cannot forge or counterfeit real money. On the other hand, each particular bank-note or bill has some special particular added to it which gives it distinction, such as the name and address of the payer and payee, or the bank at which it is to be made payable. This increase of particularity of "paper," should it be lost or stolen, makes it difficult to negotiate, and assists its recovery. Money stolen, on account of this absence of particularity or rather individuality, cannot be recovered or at least distinguished. To the invention of bank-notes and bills of exchange has been superadded cheques on your bank account. This is the most convenient and general form of the satisfaction of indebtedness and transfer of money. In cheques the immediacy and individuality of the mode of payment is increased. Notes can be exchanged and remain in the active circulation of the money of the country for an indefinite period. Bills of exchange require a drawer and acceptor. By further endorsation the natural term of their monetary life can be prolonged. It was a common thing formerly for a bill of exchange to be finally presented for payment with twenty or thirty endorsements representing so many transfers. But their term of life is strictly limited. In the case of payment by cheque there is only one transaction, and, although a substitute for money between debtors and creditors, cannot remain in general, or indeed limited, circulation. So useful have cheques become in the event, that the London bankers' clearing house pass through their hands cheques to the face value of 10,000 million pounds annually.

We may say then, of representative and substitutionary money, of notes, bills and cheques, that their sanction, the condition of their existence, is their being

payable or transferable into real money, into gold money, on demand. They are not representative of wealth, but of wealth already in the form of money. It matters not the solvency and wealth of a business firm, it cannot carry on that business unless able to meet its "paper" obligations in gold money if and when demanded. Commercial "paper" rests on trust and confidence, but trust in what? Not trust in the issuers of these obligations at some future time redeeming them in specie, but trust in these obligations being met in gold at the moment of presentation, if so desired by the presentee. The paper substitutes for real money economise the use of the metal, are more convenient and rapid, are easier summed and accountanted. But all these advantages are conducted under the responsibility and watchfulness demanded on the part of those who must ever meet their engagements in the coin of the realm.

We say, then, gold discharges an industrial function, the function of money. This function is not a unity but a complex. Money discharges no less than six specific, diverse, and easily recognisable functions. These are (1) a measure of value; (2) a media of exchange; (3) a certification of value created; (4) a power of general purchase; (5) a power of arrestment of activity; (6) an instrument of increased economic economy. It is to the imperfect analysis and non-recognition of the varied functions of money that much, if indeed not all, of the confusion surrounding the money problem is to be ascribed.

We have said that money discharges six specific functions. We are not sure but that we should have said seven. Only the preliminary one is so simple and self-evident that it might have been left as safely assumed. It is that money is the language of value and prices. It is the language of number and of money forms, the £ s. d. that runs through all industrial operations. With this recognition we pass on to the first of the functions we have stated.

(1) Money is the measure of value. We have very

fully considered the measure of value in a previous chapter. We only say here that the principle of money as a measure of value is, that it is easier to remember the relations of many things to one thing than the innumerable inter-relations of many things to each other. It is like a generalisation in science, not only a principle of characterisation but a binding tie in memory as well. Articles and services are priced at every stage of production, and they come to be finally classed together with a general price based upon the common experience attached to them. That is a guide to the individual judgment. This common price is varied according to special circumstance. If a specific production varies from the common type by being rather better or somewhat worse, there is a corresponding variation in the price. Through competition, in the course of time this common price represents the natural and reasonable value of an article. It is the price reflecting the public opinion of the time as to the relative worth of a commodity. Thus through money you can represent scales of value and proportionate values, two very different things. Through money you can sum or state the aggregate value of your possessions, or any section of them, or any particular part of them, or the proportion they bear to one another. You can formalise your own business and compare it with others of the same or a different class. And you can do all this easily and precisely through money.

(2) Money is the medium of exchange. It is the medium of exchange, not because it adjusts values, which is a condition preliminary to all sale, but because it is actually and physically more profitable and convenient to first change commodities into money and from money again into other goods, than to barter commodities directly. It is seldom that the quantities, qualities, circumstances and places of two sets of commodities lend themselves to direct exchange. Through money you can purchase a great number or quantity of small commodities until you have accumulated a stock or consignment. In the same way you can divide and

distribute from a large purchase to a small one. Money is portable and small, commodities in general diffuse and bulky. Money presents all the advantages of division of labour, and persist or is operative, not only in the manufacture and handling of goods, but throughout all the multifarious movements and states of industry. Under modern conditions of labour an article or service may be appraised a dozen times before it reaches the consumer. In these circumstances direct exchange is impossible. What could an employer give to his daily labourers other than money for their remuneration? Besides, on sending goods to a market to be exchanged for other goods, they might meet with no goods there to exchange with, or the goods there might be other than those wanted. As this contingency is the real circumstance which has occasioned the use of money in exchange, we place the comparison of advantage in figures. The probability of finding a purchaser for your goods in money in any given market in the kingdom is as 9 is to 10, or even a good deal less. The probability of a person sending goods he does not require, to exchange for goods he does require belonging to another person who does not require them, is probably 100 to 1. It is seldom that *your* precise superfluity should suit another person's precise wants, and *his* superfluity suit your precise wants at a precise time common to both. The certainty, or rather the probability, of your exchanging successfully for money instead of for a specific commodity you want is, on our figures, 1000 to 1.

(3) Money is a certificate of value received. A payment of money is a receipt for value. It is the only recognised form of acknowledgment. No person parts with goods or performs services without receiving this form of certification. It is the national and valid form. It always means the same thing to each individual. Whatever doubts or ignorance may remain with the individual as to the nature of money, he has no doubt that his reward as an industrialist should take the form of money and be proportioned in money. It is impos-

sible that any production can pass into consumption or accumulation without first being appraised and paid for in money. That a person possesses money is a certain proof that so much human energy, his own or that of some other person or persons, has been expended to secure it. As long as a person retains that money it is evidence and a certificate that he has not consumed it or transformed it into fixed capital. It is thus ready for immediate use. In the case of a gold standard and gold money there can be no unreal and fraudulent consumption and accumulation. Nothing can be purchased without money, nothing can be sold without it. That the money is there is proof that it is still unconsumed, and can therefore, if its owner chooses, be added to the accumulated wealth of the community or be expended to satisfy his personal wants. The possessor of money, in the mere fact of that possession, proves that he legitimately possesses a share or fraction of the efficiently expended industrial energy of the world.

(4) Money is also the general power of purchasing. That is, as money it is unparticularised; it is without concretion. This is one of the greatest forms of the usefulness of money. Change your particular form of industrial value into the universal of value and you can reconcrete it in other form you choose. You can change corn into money (the universal) and with that money at different times you can purchase implements for the farm, clothing for your children or ribbons for your wife. There is no commodity that is of economic value that you cannot exchange into money, and there is no need or desire you cannot gratify if you possess money. The power to purchase is the way we state this important fact. Everyone's wants and desires are either more varied than the specific form of his industrial energy. An individual may only manufacture one single product, but he expends the money he receives for that commodity in a hundred different ways. Or, on the other hand, a person may deal in hundreds and thousands of articles to make a living. He has therefore to transform them all into money first, that he may

reconcrete them in the more limited forms of his personal wants.

(5) Hardly less important is the power conferred by money of arrestment of the continuity of economic process. It is a power to pause between the act of sale and the act of purchase. It is an opportunity to wait the arrival of a suitable article, and to wait for a suitable time. This is an inmost and characteristic service performed by money. In barter the industrialist is largely the child of circumstance. He is one of a set of constantly dependent circumstances. He has little power of will or choice. He must go on, and complete the cycle of exchange. You must exchange or lose opportunity. But you may have to exchange at a loss, or the opportunity not seized may be gone for ever. With the aid of money you can buy or sell to-day, to-morrow, a year hence, or not at all. It gives you timeous opportunity. It restores that determinative freedom temporarily lost to industry in its earlier stages through the force and exactions of circumstances.

(6) The last advantage of money and its adjuncts is that they are industrial instruments of increased economy. We demur to the opinion that though money is useful and indeed necessary, it is not a source of real and direct economic advantage and profit. Of course we admit that money is an indispensable adjunct to industry, that without money and its substitutes industry as we know it now would be not only seriously hampered, but would even cease to exist. But we assert also that the super-addition of functional money, real money and its substitutes, to industrial process is in itself profitable, is a saving of economic energy and time, and therefore economically profitable. First let us justify the use of representative money. The bankers' clearing house of London passes through its hands, that is, receives, verifies, serves and transfers cheques of the face value of 10,000 million pounds every year. In addition to that form of substitute you have to remember the note issue and the

bills of exchange in circulation, and in brokers' and bankers' hands. These facts only reflect the trade of London. But London's experience is only that of the country at large somewhat accentuated. Without the aid of paper money we could not carry on the business of the country. If bullion had always to discharge indebtedness at home and abroad, the time, the transport, the cost and waste would demand the greater part of the energies of the nation. That a cheque for £10,000 transferred from the wealth of one person to that of another can be done instantaneously, or by one minute's writing, instead of having to go through the slow and tedious process of counting and checking the 10,000 sovereigns, is an immense saving of time and money, and is a self-evident advantage. As money and money substitutes have grown in number, variety and efficiency, so also has the trade and profit of the world. They save an immense amount of time and energy, they multiply the number of transactions possible in a given time by the same person. They save the cost of transport and handling of bullion within cities, and from city to city, district to district, and country to country. They remove an element of risk. They further give an element of precision to transactions, which is a great impetus to aggressive trade. We are confident that the profits secured to general industry by the system of money not only pays for its production and use, for the cost of its arrangement or the trade of money, but also leaves a large surplus to reduce the general cost of production and the price of commodities to the general body of consumers as well.

We have this further to say of money in general. All production assumes the temporary form of money. While in that form it can assume one or other of three conditions. Money may be expended in the purchase of commodities for immediate or ulterior consumption, in the needs and adjuncts of life and living. Or if unconsumed money may remain as money in active circulation and discharging monetary functions in

industry. Or it may be added to the accumulated capital of the world to be loaned or fixed in some permanent form of utility and value as wealth. The point is that productive energy when in the form of money may be left so, may be consumed, or may be added to the world's accumulations. At no other point or phase of industry and in no other way does this parting of the ways take place, this determinative opportunity, this imperative choice thrust upon the will of the industrialist. It is a really crucial moment. Shall you consume all your earnings, shall you remain in active business, or shall you seek rest and leisure on your accumulated savings?

The monetary element is necessarily attached to all the phenomena of industry. If it has no monetary aspect it is not an appraised utility, and therefore is not within the movement of industry. Money and the idea of money pervades all industrial operations. It is more actively and consciously present than any other feature of industry. The simplest article and the most complex service is valued and paid in money. In exchange there are four specific acts: the commodity sold and the money paid, the money paid and the commodity bought. Out of an act of exchange two stages appear as commodities and two as money. Then in the case of valuation the same proportions are to be observed: the price of the buyer and the price of the seller. Consider also the number of times commodities and their stages of manufacture, and the labour expended on them, are independently valued. Take account also of the manifold of monetary transactions in the business of money, and you will be convinced that money is the greatest, most frequent and most constant fact in industry. We do not say the most important but the most outstanding. Thus the flux and variety of industrial activity is ever accompanied by a monetary thought, a thought of quantity, value and utility expressed in price, in figures. Numbers and prices are a formal and mathematical relation. The trend of industrial experience is always

toward measure, and that measure expressed in mathematical terms of number and quantity. Utility and value in the form of price is thus a mathematical and logical principle connecting and unifying all industry. We cannot say that this precise and formal mathematical relation is more essential than the law of competition, or the law of parcimony, or any of the other laws of industry, but we can say while it is as universal, as useful and as essential, it is more consciously and formally present than any of the others.

There is another consequence flowing from the universality and constant process of valuation and exchange through money. What is valued and expressed in terms of money at some period or another, under some process or another, is the whole of industrial experience. Now we know *that* experience embraces much of psychic as well as organic experience. As yet we have no precise and scientific data on which to proceed and ground our judgment upon, as it comes from or is involved in the industrial psychic side. Yet though we have no scientific ground or mode of estimating such psychic forces and forms, we know that in actual practice we do form such estimates. We have also formed them with such practical accuracy that the world's work proceeds upon these results, and recognises the efficiency of these methods. All that is averred against them is that they have not scientific precision, though they have practical accuracy. Now, what are the grounds of this practical, not scientific, assurance? It is the common conviction, the common consciousness, that this has been successfully done. And one of the facts that gives confidence to the consensus is the frequency, the universality of the operation. It is done to every article and every stage of every article and service throughout the whole of industry, every minute and second of time. It is done from day to day, from year to year, and always. It is done by every human being outside as well as inside of industry. It is verified in the result. It is the world

at large, as well as industry, that determines the value as well as the price of the satisfaction. All know when they have got value for their money. We have no scientific basis for our conception of a lb. weight. It is a purely arbitrary and empirical conception. It is not the less true on that account. Through constant association of ideas, through constant experience of what is accounted beyond and below a lb. in weight, we have a very true conception of what is implied by it. Within the limits of relativity we have. But so also has the world's opinion as to values; the values of energy, contingencies, of the thought, knowledge and character embodied in a commodity or rendered in a service. Conception of price comes to be a thought continuum, an unconscious gravitation towards a received consensus, an intellectual sub-conscious state pervading industry and guiding society towards an instinctive apprehension and appreciation of value. It is a subtle, though definite enough, influence instilled into us from infancy. We say, then, this constant correlation of all forms and arts of industrial experience to physical and mathematical forms and expressions has developed in course of time a practical accuracy which the common-sense of mankind knows to be true. It is an active and precise enough principle among practical industrialists; it is a passive but intelligently responsive sentiment among those outside.

Money is an interposition, a superaddition, a multiplication of industrial process. To its characteristics as a commodity it has superadded to it industrial function. We should rather say functions. It discharges these functions on and through a consensus of opinion. The widest view of these functions is relative. It is through relativity money touches and binds every act and phase of industry. To what are we formally to ascribe this fact?

We say that money has come to discharge these industrial functions primarily through its higher notionality. It must be so. To estimate, to compare and to correlate all other commodities together and with

itself is only possible on the fact of this one commodity—gold money—possessing all the experience, embodying all the forms of industrial energy expended in the production of all other forms of production, and special qualities besides. Gold embraces the full industrial experience, and it has *special* qualities that render it the only possible commodity competent to discharge the function of money. Although gold in its own nature and value became early easily exchanged, it was only when money was introduced that its special properties as a material for coinage and valid money came to be recognised and superadded to it. Its natural qualities led to its selection for a specific function, that new artificial function increased the number of its natural properties enchained to practical industry. That is, the actual and practical use of gold invaded still further its potential and hitherto unrecognised forms of usefulness. We need not say that a higher notionality means the fullest synthesis of the greatest number and variety of particular and conceptual qualities. There is nothing in industry that notionally surpasses gold discharging the function of money; there is nothing overtops it, nothing outspans it, and there is nothing in industry which it does not measure and cannot correlate. To all this has to be added the world's consensus, the world's sanction and recognition. That is in one sense a constituent of its higher notionality. Only it is an exclusively moral and extraneous consideration. It is an affirmation of the common judgment, the homage of the common experience. It is bestowed on gold money from without, it is not a development of gold money from within. It is an extensive, not an intrinsic, circumstance.

We have said money discharges functions, and that the widest aspect of these functions is relation. The characteristic form of this relativity in industry is formulation, precision in particulars and ordered synthesis. Money discharges other functions than relativity. The certification of value received is one of them. Still relation is the *special* form. There are

also other forms of relation than price. Money is a medium of exchange. There are other forms or principles of formalisation in industry than money; utility, the ends of industry, the processes, the materials can all be made the instruments of synthesis. But the characteristic as well as the most common form of industrial relation is that of money, utility and value conceived of in mathematical form and expressed in mathematical terms. Money seeks, after the service of industry itself and as a branch and phase of industry, to give precision, form and synthesis to all the economic phenomena it comes in contact with. Further, so far as monetary relations are concerned, it achieves greater synthetic influence and results than any other phase inside of industry.

This process of formulation has a characteristic form. It takes the mathematical form. There are other forms of formulation; the logical, for instance. But the characteristic form of monetary formulation is the mathematical; number, quantity, and their correlation. That is very important, because it implies the seeking for a precise, a scientific interpretation. It seeks a synthesis embracing more than merely physical phenomena, starting from and within the physical and passing beyond to the psychic in the spirit, and on the lines of exact science.

We say little of banking. There is an immense literature on the subject. The essential of the institution is very simple. Bankers may be described as those who carry on the business of money. Their primary function is to keep and safeguard the money of their clients. The banker has to adjust the payments of the indebtedness of his clients. He has to arrange for the honouring of drafts at various places, which is a process of transmission. Through the banking system the day-to-day adjustment of the country's indebtedness takes place. There is a clearing house in every business centre of importance; the respective banks clearing each others' notes and business cheques, and paying the difference in bullion or a draft on the Bank of

England. The international indebtedness is arranged in the same way. The obligations of each country are aggregated and the difference for or against settled in gold bullion. The total transactions of the world amount to fabulous figures. If you consider that when bills and cheques do not meet each other they must be met in specie or bullion, one can imagine the intricacy of the arrangements and the amount of forethought required in these large international arrangements. Yet with such skill are they managed that the transfer of bullion from one country to another to meet specific paper obligations is comparatively small.

Bankers also collect and put at the service of industry all the small sums not needed at the moment, and which have been lodged by their customers for convenience and safety. These deposits, while changing every day so far as individual accounts are concerned, are in the aggregate and on the average fairly steady. The larger and periodical movements affecting these are known and provided for. But though the average amount at the credit of each depositor is comparatively small from the immense number of depositors, the aggregate sum at the disposal of the country's bankers is very large. It is in the utilisation of this aggregate, of no use individually, of vast use collectively, that one of the most useful and profitable of the functions of our banking system is discharged. The business of money is a form of industry based upon the widest generalisations, and yet very precise adjustments. It is ever changing, and depends in a pre-eminent degree on the personal qualities of its guides and directors, their honour, vigilance and precision. Briefly, the functions of banking are, the reception and safeguarding of money, its transmission, the adjustment of personal, local, national and international indebtedness, and the loaning or receiving on loans of money.

CHAPTER XIX

ACCUMULATION

WE have seen that the phase of money is the watershed of industry. On the side we have treated lies production. On the side we are now going to treat lies consumption and accumulation. Setting aside for the time consumption, we confine ourselves here to the process of accumulation, and the application of a portion of these accumulations to the purposes of industry as capital. And we take the fact and process of accumulation first.

We observe of it that it is not only a specific and well-defined process in industry, but that it is a division of industry, a phase of industry involving a difference in form, in action and in motivation. Though it must have production as an antecedent it embraces another process as well, saving. You cannot accumulate without saving, and you cannot save without having previously produced. Our current needs must be supplied first. When these are supplied and we continue to labour, we have created the condition, the potentiality of saving. If, however, we still expend the remuneration of our labours on pleasurable satisfaction, while we may make and enjoy a large income, we cannot accumulate. The essential condition of accumulation is that we should produce more than we consume. There are therefore only two courses open. The industrialist must either exercise great privation and self-denial and save off an ordinary or small amount of exertion or a small remuneration of exertion, or exercising only ordinary self-denial, permitting to himself a reasonable share of the pleasures of life, he

must exert himself more and out of that supra-exertion lay aside for accumulation. These two classes of accumulation are not only characteristic of individuals but are national types. In France and Spain accumulation is by thrift. In Britain, and particularly in the United States, accumulation is secured by sheer "go," by superior energy. Now, though it is true that some specially favoured or circumstanced individuals can gratify all their wants and desires and still earn more than they have time, opportunity and inclination to expend, and must therefore perforce accumulate, these are exceptional cases and do not fall to be treated of under a science of the common experience. Ordinary labour and severe abstention, or exceptional exertion and small privation are the two ordinary conditions of accumulation. We have also to notice that the first, ordinary work and exceptional self-denial, is the most common experience, is the experience of the humbler industrialists who seek to rise from the ranks of chronic poverty. With these self-denial, privation, is the dominating fact governing accumulation. With those in the higher ranks of industry it is not self-denial that is the dominating factor in their life, but energy, superior and more productive activity.

We may also observe that on account of the restrictions upon ordinary labour, upon its hours and energies, thrift, self-denial, is the only possible source of accumulation open to the great mass of our working population. On the other hand, until the advent of trade trusts and combines there was never any restriction upon the capitalist class, either as to the amount or length of their labours, or as to the extent of their economies or self-denials. Time will show whether the curse of coercion is to be extended to capital as well as to labour, and self-denial be the only source of accumulation above as well as below.

Thus, then, the first distinction between production and productive accumulation is that one is an exhibition of energy and the other of self-denial. That the one is an active and the other a passive force. There are now

two qualities and conditions involved instead of one. And the additional quality is a moral quality ; that of self-denial, restraint, privation. It is also of importance to observe that the one condition—production—is imperative, is a necessity of existence; the other—accumulation, self-denial—is voluntary, is a self-imposed task assumed by humanity.

The second point we notice is that while productive energy evoked for pure consumption, to supply the current needs and wants of society, is a temporary and evanescent form of effort, accumulation has for its purpose a future and permanent, or relatively permanent, objective. A person seeks to save that his accumulated labours and earnings may assume a permanent form, may go to join that static condition of things that go to improve permanently the world we live in and the human society that lives in it. Production is a present-time thought grafted upon the inherited accumulations of the past ; accumulation is an added purpose with the permanent future, and ulterior as its motivisation.

And the third remark we make is that of the two forms of force which have built up the wealth of the world, production and accumulation, while public attention is most attracted to production *per se*, and while it is true that there can be no saving but from what has been previously produced, we do not hesitate to say that the self-denial of the world has had more to do than its energy in making the world we live in what it is to-day. The greatest present-day triumphs of productive energy are based upon and are the consequence of its previous self-denial and accumulation. It is like knowledge and its accumulations, the deepest truths are *only possible* through the pre-existing body of knowledge. Additional knowledge is a superaddition, but a superaddition only possible on and through the pre-existing. So with industry. The astounding modern productivity and thousand sidedness of industry are only possible, not only by the labours, but the self-denials of our industrial ancestors.

Let us see if we can present the problem another way. Though the truths we have stated are not only true but self-evident, they are apt to escape adequate recognition in virtue of their very simplicity.

What is it we accumulate? It is human energy applied to certain natural materials and agents to give them forms and properties, and transfer them to places useful to humanity. The human energy is irrevocably stereotyped in some useful quality or circumstance of a permanent, or relatively permanent, and useful character. Now in simple production we equally, through energy, bestow utility and value upon materials, but it is of a temporary and dynamic rather than a static character. The result perishes, as it is intended to perish, in the using or consuming of the product. In accumulation, unless we give these energies permanency and extended futurity, accumulation is impossible; a perfectly possible contingency. Thus the results of economic energy comprise those that are exhausted in the fact of immediate use, day-to-day exigencies; and those that pass on through an ever-lengthening chain of permanence until we reach those that constitute our permanent environment, have become part of the physical conditions of things, give character and development to civilisation, and are grafted on and mould the character and destiny of the race.

And here we may remark that the form of accumulation need not take the form of material concrete wealth. A parent may invest his accumulations in circumstances to better the health, the skill, the knowledge, the surroundings of his children, and will have then as truly added to the economic productivity of his children and the wealth of the world as if he had placed these earnings in the savings' bank to his own name. The bulk of the national wealth and resources, that which makes a nation industrially powerful, are those obscure and unobserved items of expenditure which permanently better the people and the race.

The recognisable stages or forms accumulation can or rather does assume from the primary fact of simple

production to the most distant results embedded in our common civilisation are—(1) Money as a circulating medium, money to measure and exchange commodities and services with. (2) Circulating capital, or utilities required in production, such as wages and raw materials. (3) Money in permanent form; that is, wealth capitalised in the form of money, the certification of value received, and which is loaned to industrialists for reproductive purposes, such as mortgages and the capital of our banking companies. (4) Fixed capital in the form of machinery, buildings, mines, railways, roads, docks, and permanent improvement on lands, etc. (5) Wealth in land and sites, in fisheries and minerals, in definite and specific forms, such as mansions, jewels, pictures, furniture, etc., and all wealth not applied to purposes of reproduction. (6) Indefinite wealth, wealth impossible to specifically particularise, yet embodied in true and permanent form in the education, sanitation, the science, the æsthetic enjoyment, the social intercourse, the civilisation, the laws and administration and the defences of a country. Now it is of the last, and the most important form of wealth, which all mutually enjoy without specifically contributing toward, except in the case of taxes. A working man born in Britain has the free advantage of the labours and accumulations of Britons for the last thousand years. Is it nothing where you are born? Think of Russia. A British working man in virtue of his nationality starts on a plane of advantage which in many other countries is the privilege of the higher classes.

It may be said of all economic phenomena that they are in a constant state of flux. Industry is a movement and a moment in that movement, not a fixed condition of things such as the physical world around us. But that holds true only of production. In accumulation the purpose is permanence and the results are static. It is true that even the permanence of accumulation is only relative, but the intention is that of permanency. In the same way it may be said of productive energy, that it is a form of force existing only and lasting only

during the period of its activity and exercise. But still, though flux—fluidity—is its characteristic, it has forms of permanence in its aims, its particular knowledge, its interests and its organisation. These sentences will enable us to re-survey from another standpoint our six classifications of accumulation. We now observe of them that these forms of accumulation lose particularity and become more general, lose simplicity and acquire complexity, and leave the condition of flux and evanescence, and assume permanence or relative permanence as we advance from the initial point of accumulation, simple production. And further, the stages of this change are in the order we place them before our readers; in fact, that our sequence is a logical, not an arbitrary, arrangement. As to (1) money as a circulating medium. It is evident that the money we employ as a medium of exchange, the current coin of the realm, must have been first accumulated before it could be utilised for currency purposes. Nothing could be more simple or more specific, and in virtue of its function have more fluidity or less permanence. Nearly as specific is the accumulation (2) manifested in the possession of commodities to be used in the supply of day-to-day wants, or the capital vested in wages, and the raw materials of production. We say nearly as specific; still the stage of notional progress is very perceptible. There are many kinds of wages, many forms of consumption, and more and more extended timeous relations. Money disbursed in wages is at least a day's capital or a week's capital, accumulations of wealth to keep the worker from pay-day to pay-day. A fortnight's pay means for the labourers, as well as the masters, a fortnight's accumulation. Thus a day's wage is more of generality than a person paid for a specific job. A fortnightly pay is a general sum for a general service, and of course for a longer term of service and for a longer term of subsistence. And though raw materials appear on the threshold of production, they are themselves an accumulation, a complex, and in many cases are of a considerable term

of permanence; such as the cotton or indigo crops. We may say, then, that production itself and consumption implicates previous accumulation. Then we have accumulation in the form of money capital (3) money as a form of accumulation and used as such. This form is presented as the capital of our banks, their rest accounts, the deposit-receipts in and loans to bankers, the balances lying at the credit of their customers' accounts, loans on mortgages and securities. We have in all these cases accumulations of savings assuming a more aggregate, a more general and a more permanent form. The particular elements of the accumulative process disappear from view completely. This money capital, it is true, is loaned to industrialists to be transferred into commodities or services for reproductive purposes; but that is a change that takes place, not in the hands of the bankers or lenders but in the hands and at the initiation of producers themselves. More marked is our process of development in the next class (4) that of fixed capital—capital invested in machinery, buildings, mines, railways, roads, docks, permanent improvements on land, etc. All these forms lose particularity, simplicity and evanescence, and assume a more general, complex and more permanent character. The next class, wealth severed from reproductive purposes, but yet real wealth, as objects having utility and value (5) are lands, government and municipal stocks, mineral fields, mansions and pleasure-grounds, jewels, pictures, furniture, etc., and all wealth not applied to reproductive purposes. All these, even land, and more especially land, are leaving the simplicity, the particularity of specific industrial effort. Viewed as further stages or forms of wealth, they are the result of extended experience, embracing in their present forms more of complexity. As to their permanence, the very idea of wealth is those forms of it which have assumed the most static and lasting conditions. The last class (6) is that of indefinite wealth—wealth impossible to particularise, yet embodied in true and permanent form in our national development

and civilisation. This form of wealth is irrevocably sunk in the national life. It cannot again assume a specific form, it cannot again be applied to purposes of production. In many cases it has gone into the national wealth through giving no return to its former owners. It has become a part of things, a part of our common life. It is capital sunk and giving no specific, or at least apparent, return. In other cases it has been consciously sunk in education, in an improved environment, in our science labours and discoveries, and in a strengthened and developed state. All trace of the personal and particular is lost, even the very notion of wealth itself disappears as we lose sight of it in the maze and slow mergence of specific activities in the common life of the nation itself. And it lasts as long as the nation lasts. This unrecognisable wealth is only lost in the decay of the nation or its civilisation. Who can measure its amount or value? The most of it is in the souls and minds of the people.

Accumulation, then, is the source of wealth. It depends on a moral quality, self-denial. It is therefore a duty. It is a source of national prosperity. It is therefore a policy. Is this combined duty and policy obligatory upon all classes? Is it as imperative on the part of the labourer as on the part of the employer? We must not go away with loose notions on the distribution of the spirit and capacity to accumulate. Accumulation was in early civilisations mostly imposed from without through the authority of the government and by taxation. Accumulation was in the main extorted by taxes, and was expended on public works and utilities. It is important to remember that form of compulsory thrift, or rather privation, is still a resource at the disposal of the state in the event of any section or sections of the community receiving advantages without contributing anything in return. Later voluntary accumulations came mainly from what is described as capital, from masters and wealth owners, from the classes, not the masses. It is distinctive of modern civilisation that thrift begins,

though it does not end, at the very bottom of society. It cannot be denied that saving among the poor and labouring classes is a much more arduous practice of self-denial than the same self-denial among the classes above them. Persons must subsist before they can lay past, and the nearer their earnings are to the cost of subsistence the more arduous the effort after accumulation becomes. The opportunity to save and the extent of the privation involved in the fact of saving increases in geometrical ratio as you approach the cost of living. It is easier for an individual to save 4s. out of 30s. a week than it is to save 2s. out of 20s. a week. In fact, the privatory effort *per se* of saving 12s. out of 30s. a week is approximately equal to the privatory effort of saving 2s. out of 20s. a week. The common measure of need, the common form of satisfaction and the common power of purchase is identical in both cases. Any difference there is in the two cases is personal, arbitrary and adventitious. It is no harder, other things being equal, for a person receiving 30s. a week to live on 18s. than for a person receiving 20s. a week to live on 18s. Still, in virtue of this very arduousness, thrift and saving among the very humblest classes is the more important. It demands and, where successfully made, is evidence of a higher type of inherent character. It gives workers a point of fuller sympathy with capital. Nothing so disastrous as a poverty and a labouring population without the opportunity and interests of thrift. Nothing politically more dangerous than a sharp, clear, impassable division between those that have and those that have not. It gives labour a greater stake in the existence of the permanent in industry and society. It would solve many labour problems, such as housing and emigration. But there is a deeper consideration to state. Why have former industrial civilisations passed away? Take the case of Greece and Rome, the Middle Ages, and, indeed, of Europe, until the beginning of the eighteenth century. In all these cases we had a condition of labour unable to save and accumulate. They could only live, and live

without the slightest hope of improved condition or a rise in social position. All accumulation was confined, and was only possible to the higher classes, their friends and those dependent upon them. Accumulation thus confined to the middle and upper classes, these classes could not be reinforced from below. Industry drew, not upon the strength, ability and interests of a nation, but of one or two small sections of it. But when these small and narrow classes became enervated by luxury and artificiality, when natural exhaustion and decay set in among them, there was not the wherewithal to recruit their ranks, to reinvigorate them, to rejuvenate them. They had made no provision for the rise of the best of the people to join in the direction and advancement of industry. These civilisations gave no natural outlet or relief to the pressure coming from below, to the fierce pressure of capacity and courage, conscious of power, and denied opportunity and natural rights. A vast complex of civilisation was superimposed upon too narrow a basis. Thus in the antithesis the cause of the superior stability, energy and continuity of modern industry. Accumulation is possible to all her sons. It is an existing fact among some of all classes of society, from the humblest to the highest. It being possible to some of every class, it is possible to all of all classes. Accumulation is a moral discipline, a personal advantage, an industrial necessity and a patriotic duty. We owe accumulation to the future of the world and the race. We require ten thousand times the present wealth of the world to make that world capable and worthy to hold all the possible population that can and will be born into it.

We repeat that while accumulation is a duty and, in consequence, an advantage, to all classes of society, it is especially dutiful and advantageous among the lower ranks of industry. It is to the lowest ranks of industry and society that social and industrial failures and decadence sink. But they sink there either to die out as unworthy to take a place in the great scheme of life, or to rest and recuperate there, and again battle

their way up as worthy sons and superior servants of the race. But it is also in the humbler ranks that those rest who have never fallen, because they have never risen, have never had thoughts to rise. The psychological moment of ambition or duty, other than to live true lives in the station they were born into, had never come to them, had never stirred their hearts and minds. But industry, higher industry, industry possessed not only of ability and character, but possessed of wealth to give actuality, to give visible expression to their thoughts and purposes, requires them. We cannot have too many recruits rise. We want talent to rise and have the opportunity of making its mark. There is a continuous process of deterioration and exhaustion going on in the higher ranks of industry and society. We must have fresh blood to take their place. The children of parents who, under the pressure of poverty, had energy and self-denial enough to accumulate wealth carry with them above the grit of the couple that bore them. It is talent that makes work, gives employment, raises wages, that makes their country wealthy, prosperous, happy and great among the nations. It is the purpose of accumulation among the people that gives tenacity, as distinguished from energy, to the national character. With thrift spread generally among the people the power of national recuperation after national disaster is something extraordinary. Witness the recovery of Germany and France from the financial disaster and economic ruin brought about by war and revolution. In all cases it was the thrift of the peasantry and working people and those immediately above them that was the main cause of their rapid recovery from apparently irretrievable national disaster. Further, though the savings of the working population are small, their immense numbers total up immense sums. £10 a year to 20,000,000 of adult population, and there is that in Britain, amounts to £200,000,000 a year, which is the amount at which the annual accumulations of the country is computed at.

All forms of accumulation are not legitimate accumu-

lations; nor yet are they economic accumulations, the accumulations of honest effort and patient self-denial. It is important, then, that an industrialist entering upon a career of accumulation should have before his mind that there is productive and non-productive accumulation, accumulation that adds to the wealth of the individual and to the wealth of the community, accumulation that is legitimate and an accumulation that is illegitimate. The only legitimate form of accumulation is that of the results of your own labour, character and intelligence, those remunerations you have received in return for effective work. Vast fortunes are accumulated hardly a penny of which consists of the reward of honest labour. These do not consist of wealth produced by the possessor but the proceeds of successful swindle and the legal robbery of those who have honestly toiled. The first idea, then, of those entering industry is that they will attach themselves to a form of it in which success will be not only a fortune to yourself honourably won but at the same time a real advantage to your country. It is a great thing to look back and be able to say that while you served yourself, at the same time you knew you served your country as well. It is a most important thing the moment of your entry upon industry. It practically determines your life's future. You have to consider not the mere acquisition of wealth, the thief and swindler does that, but the manner of its accumulation. There are no ashes of regret left between the teeth of those engaged in real production. Although the appeal to the honour, the sense of manly independence and justice, is, or should be, sufficient, it is as well to point out that those who have not honestly earned never retain their ill-gotten wealth, but that it perishes in the hands of themselves or children. And they perish with it. It is a world's times observation that the only wealth that survives is the wealth in the honest possession of honest industry. Only the industrial worker and his successors have the qualities to keep and guard the wealth made in industry.

There is a natural rate of accumulation of wealth, just as there is a natural value and price and a normal day's work. The natural rate is not a race; it is a march, an orderly advance. It does not mean the possession of millions to-day and beggary to-morrow, nor beggary to-day and millions to-morrow. It is a steady, a somewhat leisurely, and decidedly prolonged process. Starting from the ranks of common labour it will take three generations of honest accumulation to reach a fortune of six figures. It will be probably a fourth generation before it takes seven figures to cover the family fortune. That sums about a century. It is an ambition fulfilled in a family policy pursued uninterruptedly and unswervingly for a century. There is nothing so disastrous as the hurry to be rich, the abandonment of nature's orderly sequence and methods. It is the curse of the age. It means shattered nerves, unsatisfied consciences, and weakened vitality. The idea of rapid and personal success is a selfish and disintegrating social element. On the other hand, the ambition, the hope, the deliberate prescience, and the sacrifices to be ultimately realised in another, in an unseen and future individual, is an unselfish element, is a synthetic relation, is of that hope and prescience projected into the future that gives to nations destiny.

How are we to secure and promote the habit of accumulation? To save is to abstain, a course of self-denial. It is therefore a moral state. A moral condition can only be superinduced and maintained by moral considerations. To engender and maintain the habit of accumulation we have to appeal to the moral sense; to the personal, family, patriotic and altruistic sentiments of the industrialist. That fact demonstrates the true interdependence subsisting between morals and industry. To treat of industrialism without reference to morals is to treat of industry without considering the impelling forces underlying and governing it. It is like writing of the steam-engine without touching upon steam or the steam-boiler. Thus we appeal on behalf of accumulation to the personal interest of the industrialist, that he

may add to his ultimate comfort, or make provision for old age by the practice of present self-denial. We can appeal to his love for his children, to give them a better start in life, to die with the satisfaction of having seen their feet firmly planted on a higher rung of the ladder leading to social success. We can make an appeal to the patriotic instincts of the citizen to deny self that his country may prosper and may retain or advance its position among the nations. And we can appeal to the altruist viewing this undeveloped planet and its thousand million living beings, one half of its total population, living, if not in misery, in poverty, without hope or joy in the world ; and whose condition can only be ameliorated by the supra-energy and sacrifice, by the qualities produced by industry and only developed in industry. While the one and primary moral consideration of personal prudence and interest is sufficient of itself, the other motivation must not be overlooked. It is the extent as well as the character of the whole moral condition involved that completes and rivets the cycle of effective, practical and operative motivation. Many who would not deny for themselves do so for the sake of their children. Many will do for their country what they would not do, or not so effectively do, for themselves. A growing number will do for the sake of the race, in the interests of humanity, what other motivation could not effect. But the perfect accumulator, and the most efficient, is he to whom all these motives have access to his mind and with whom they are ever living present.

These are the moral and foundational influences to which we must appeal to establish thrift among the people. But there are agencies in the hands of the community and state which, while they can never supersede the moral inducements, can strengthen them and give them direction.

There is (1) the very important power the state has of levying taxes for the provision of useful and national objects. Education and certain public works, such as canals and harbours, are illustrations. There

is nothing more industrially profitable than a sound, extended and adequate system of education. That even a score, far less hundreds, of capable minds should have the opportunity of acquiring effective or exhaustive education means millions to the national wealth and the world's wealth. It is intellect and knowledge that are the great wealth producers. Such a knowledge *schema* can only be provided by the state. Education is the preliminary to wealth, personal and national. It therefore cannot be looked for from the individuals acquiring it. It must be supplied to them either by their parents, the gifts of the benevolent, or by the state. It is the duty of the state, as the benefit that is ultimately conferred is upon the whole body of the people. As to the public works referred to, while we deprecate and condemn the state undertaking what can be performed as well by private or voluntarily associated effort, we recognise that there are now, and more now than ever, works of a public or semi-public character which the state only could undertake and which it would only pay the state to undertake. These undertakings, which would never give an adequate individual profit, are yet remunerative indirectly through the greater prosperity of the nation. They are remunerative nationally, not specifically and individually.

(2) To assist accumulation among the poor there should be an abundant supply of small stock, £10 and £20 shares or allotments. It would be as well also that a public office should exist, where a list of the desirable stocks and the names of a few reputable brokers who would effect these small purchases, should be accessible and well known throughout the town and district. Few have any idea of the helplessness and bewilderment of a poor or humble person in possession of a few pounds as to where and how to get them invested. There is a cheap yet effective form of municipal benevolence in this suggestion, and others in the same direction.

(3) Viewing accumulation from the national point of view, the state can aid thrift immensely by giving

greater protection to honest earnings and accumulations. It should be impossible in a civilised country for the reward of effective labour to be dishonestly appropriated, or to be transferred from one person to another without a real economic return. The very basis of society and the primary duty of the state is the protection of property no less than the persons of the citizens. All the coarse and violent appropriation of other people's property are provided for by the statute law of the realm. The thief, the burglar, the embezzler, the common swindler, are all arraigned at the bar of justice, and are condemned by the public opinion of the time. But the law is not yet efficient in the prevention of economic robbery; neither is the public opinion of the country sufficiently alive to the criminality and dishonour of sharp practice, fraudulent prospectuses, and the company-promoting business. One half of the public companies formed in the last twenty years are frauds or have a fraudulent element in them. They are formed with the deliberate purpose of defrauding the public, or extorting a price from the public beyond their economic value, which is a low and dishonourable swindle, and the persons perpetrating the swindle are low common swindlers, however high their position and wealth, and however they may disguise it to their own conscience or hide it from the eyes of their more simple countrymen. We do not hesitate to say that 100 millions of money or property every year is stolen or extorted from those who spend honest labour and skill and self-denial to acquire it. Such a fact is not only a crying injustice, but, as a real evidence of the passive corruption and inefficiency of modern government, is a real peril to civilisation itself. The proportion in numbers, power and social honour of the pirates of the people's thrift to the rest of the producing community has assumed really dangerous proportions. The cruel thing about them is the cold, calculating dishonesty and mercilessness of which they are the outcome, and the character and simplicity and helplessness of the classes they seek to entrap. No con-

ceivable scheme or policy could be invented so likely, not only to impair, but to crush out the habit and spirit of thrift. No person will labour and deny if the fruits of his labours and self-denial are torn from him by force, or stolen from him by fraud. We have seen it in hundreds of cases. The children of those swindled never again seek to accumulate.

(4) We are satisfied that a national scheme of old age pensions, a pension received as of right by every person on attaining (say) sixty-five years of age, would stimulate the spirit and promote the habit of thrift and assist in the beginnings of accumulation among all the humbler and poorer classes of the community. Please note, we give not the slightest countenance to robbing the rich to help the poor any more than robbing the poor to add to the already existing wealth of the rich. We have in our mind's eye a scheme in which all should justly and fairly contribute to this common fund. Within these limits and on these limitations we believe such a scheme could be easily devised at immense advantage to the country. Remember, our contention is that of all forms of thrift and accumulation, the thrift of the humbler and poorer classes is economically, politically and socially the most important. It is the prospect of retaining and transmitting savings unimpaired that is the greatest stimulus to thrift. What inducement is there for a working man to save if, in the necessities of old age, he has to part with all the fruits of his years of self-denial before the state will assist him with a single penny. He cannot but contrast his fate with that of the spendthrift that receives state support in virtue of his very thoughtlessness, while his own self-denial only postpones for a few years his entry into the workhouse. He has, by his years of self-denial, only saved the rates of his wealthy neighbours. To expect the growth of thrift among the poor in these circumstances is an aberration of pronounced lunacy. It shows an utter ignorance of human nature. There is neither equality of opportunity nor equality of sacrifice. A labourer's

capacity to labour practically ceases at sixty years of age, often earlier. A master is only at his prime at that age. His experience was never so wide, his judgment never so clear, his power of initiation never so swift and sure. The interest upon capital comes with the same unfailing certainty at ninety as it did at forty. When a working man becomes unable to work, he has to draw upon and consume his lifetime's savings. There is nothing left to aid his children. The wealthy man lives on his interest to his dying day and leaves his principal undiminished to his children. Apart from any sickly or unhealthy sentiment, do we not instinctively feel that there is a wrong here which if we cannot remedy we can at least ameliorate? If a state pension were bestowed on all and contributed to by all there would be equality of sacrifice between the thrifty and the thriftless; there would be no actual penalty on thrift and encouragement of thriftlessness; the savings of the labourer would descend to his children unreduced in amount; his children would be enabled to start life with better prospects; wealth would be more evenly distributed throughout the people; and the higher social ranks would be more rapidly and fuller recruited with fresher blood, more capable minds and bolder hearts.

CHAPTER XX

CAPITAL AND INTEREST

WE come now to treat of capital as a specific form of economic phenomena distinct from accumulation and wealth *per se*. Capital must have been accumulated and it is a part of wealth, but it is such wealth again applied to productive purposes; it is wealth reproducing more wealth. That is the sole distinction between wealth *per se*, the possession of useful and desirable things of recognised value, and wealth in the specific form of capital, that the latter is again applied to active productive purposes. We say the sole distinction. There is no other distinction in the form of capital. It may be in the form of bullion, or money, or raw materials, or machinery, or buildings. If any of these—and all of these are utilised for further purposes of production—they are, in virtue of that fact alone, capital.

Capital is one of the essential elements in production. No form of industry can be carried on without it. It is alike essential to the farmer, the miner, the manufacturer, the merchant and the shopkeeper. All these must be subsisted on previous accumulations from the time they set to work to produce a commodity, have secured a purchaser for that commodity and have been paid for it. The longer the time occupied and the greater the complexity of the forms of labour and materials involved in the production of a commodity the more the amount of the capital required. Suppose the producer gives six months' credit to the purchaser; that producer will have, in addition to his function of producer, added that of a lender of capital, and will therefore require a so much larger capital. The amount

of capital involved is always as much at least as subsists the producer from the initiatory moment of production till that of payment. Sale has superseded exchange. Put the matter in concrete form. A person has ability, skill and training. He has formed all his plans. He has secured customers, prospective buyers. Unless he can secure the use of capital to buy tools, the use of buildings and machinery, to acquire raw materials, and to pay his men their wages at the week's end, he can do nothing. All his other advantages in the absence of capital assist him not. There is a link in the chain of business awaiting and therefore the chain can bear no strain and lift no load. It is true if a prospective producer has all the other elements of success with the exception of capital, that capital will be loaned to him by a capitalist in return for a share of the profits of his business in the shape of interest. But he has not produced without capital; he has only produced without capital of his own, with another person's capital.

Capital is not only an element of production. It exists as a separate and separable interest. A person may carry on business as a simple lender of capital. Interest upon capital is one of the elements in all economic cost. It has a special remuneration which we call interest. It is an element of production differing in character from the others. It is the accumulated result of previous energy and self-denial. Its function is not specific energy, but the subsistence of the labourers who wield the energy. It keeps the labourer alive until he receives in the future the reward of his present exertions. Capital is an instrument of production because it is a form of previously-accumulated energy. The amount of these previous accumulations of that stored energy is the measure of the range of present industry; the measure of the time permitted to productive enterprise, and the measure of the mechanical assistance to industrialists. Its basis is priority of being. The present generation of living beings depends upon their forbears. It is the same way with industry. Capital is the industrial descent and transmission. It

is the interdependence of the industrial present on the past. It is, as applied to present exigencies, the stepping-stone to the future existence and progress of industry and the measure of its achievements.

Capital appears in industry, as we have already indicated in the last chapter, in three forms. It exists as money capital, as circulating capital, and as fixed capital. Circulating capital takes the form of simple money—the coinage—and is expended in the immediate wants of industry in the form of raw materials and wages and other temporary and evanescent forms. Fixed capital is more permanent and is invested in machinery, buildings, mines, docks, etc. There remains apart from these two forms money capital—gold—which is held and loaned as such by bankers and capitalists. The most permanent form is money capital. To introduce capital into industry, it has either to be accumulated or some other form of permanent wealth has to be sold and thrown into capital. In these two cases the first process is the conversion of economic interest into money. It is money that is the certification of unconsumed labours or services. From the form of money it is transferred at the will of the producer into productions and services of a temporary character, or into those permanent forms we recognise as fixed capital. Circulating capital is the most evanescent, its forms are soonest consumed and changed. Fixed capital is of the purpose and nature of greater permanence. Capital in gold is permanent as compared with circulating capital. It has more mobility than fixed capital. Money capital is a homogeneous form. It always returns to the form of the precious metals, in our own country always to gold. If it is waiting to be employed, it remains in that form. If it is recalled or repaid, it again assumes the form of gold money or its recognised representation. There is no corresponding unity of form and function pertaining to circulating and fixed capital. Industry is limited by capital. That is implicated in its being an essential condition of industry. It is a real instrument in pro-

duction. Industry is not coextensive with capital. It often happens that capital is lying idle and cannot find employment. As a rule, however, capital seeks and finds constant employment.

Let us take another look over the idea of capital. It is previously accumulated wealth applied to further wealth production. There is thus the idea of productive energy, accumulation and priority involved. Capital is an element in production. An element is of the nature of the essential. The essentiality must consist in a condition superior to ordinary and temporary exigencies. The essentiality of capital lies in its priority in time. You cannot recall the past. You cannot create in an already past. Capital as capital has this unique history and element, that as it must be an accumulation in the past, its character is that of a natural and irrevocable condition, something wholly different from a present-time contingency. Thus the charge for its use as an indispensable and limited agency, partakes as much of the nature of rent for the use of a natural agent as a reward to the lender in the form of interest of his previous energy and self-denial. What we are going to do now is to answer the question why we pay this interest. Is it for the use of an inherently indispensable and limited agent only? Is there no specific and direct advantage to production in its use? Is it a natural tax on the conditions of industry, or is it a real economic advantage and profit? How does the use of capital add to the wealth of the industrialist and the world?

There can be no doubt that capital is the means and fund for the subsistence of labour between one harvest and another, and intermediarily between the beginning of a specific act of production and the receipt of its price after sale. We subsist the present on the labours of the past.

We can also see that capital is the measure of process. To produce an individual needs raw materials not less than labour. These materials, until embraced in a finished and marketable form, are in a state of economic suspense. They are for the time valueless.

It is capital provides for and maintains this necessary and temporary suspense. It is a time element.

Capital not only permits extended arrangements, but it also makes possible concentration, and thus saving of labour. You cannot unite a real industry under one roof without the aid of capital. We are not confounding capital with energy and invention applied to industry. We say that capital, accumulation and priority, alone render possible and profitable industrial concentration.

Suppose you sink a mine for coal. Coal is a product of which much more is wanted at one period of the year than at another. There will be more than twice as much consumed at the depth of winter than at the height of summer. You find yourself, then, in this position with regard to the labour. You have either to raise the coal as you have a market for it, and that would be the case if you had no capital, in which case there would be a vast demand for miners in the winter and small employment for them in the summer. The vast winter demand for miners would raise their wages above their natural value and greatly raise the price and restrict the use of coal as a commodity. You would also dislocate all local industry by withdrawing the exceptional number of miners required in winter from surrounding forms of industry. The other possible course is to turn out from day to day the average daily consumption of coal consumed in the country and store it until the market calls for it. That can only be done by the aid and use of capital. You then give regular employment, utilise the men's time throughout the whole year, you prevent dislocation of local business, and prevent suffering, inconvenience and other evils among the men. We say, then, that capital is an economiser of labour and therefore directly economically profitable.

A large proportion of the materials of production, and even in some cases the labour of it, run in a cycle of price; they have a low price period and a high price. Take the case of tea, cotton and indigo, etc., as

examples. A person without capital is always buying on a rise. With capital he buys at the period of lowest price as much material as serves him until the low price returns. That is a specific economic gain.

Capital gives the producer the option of the market. He can hold until it is most profitable to sell. He is not compelled to sell at an unfavourable opportunity. He can buy on a favourable market, though not immediately requiring. That is a specific function and specific source of profit. Many capitalists make their income without producing or distributing or consuming, by simply buying and selling, the difference between the purchase and the selling price being their interest and profit.

Thus, then, the function of capital is fourfold. It subsists the labourer during industrial operations. It permits of timeous arrangements and prolonged industrial process. It regularly distributes and economises labour. It gives the option of the market. Capital as a condition of production receives a rent. As a result of accumulated energy and self-denial it is remunerated through interest; as an instrument of direct and immediate profit and arrangement it adds to the wealth of the individual and the nation.

Capital has a relation to the other than industry, to the world outside of it. And it possesses that relation in virtue of its passive and intermediary position. When a person becomes wealthy he generally lends his wealth to those engaged in active business in the form of capital. He aids production not by actively participating in it himself but by aiding those who do. The capitalist only exercises a few acts of will and judgment and a general watchfulness and vigilance over his loans or investment. He is thus left with a large leisure, he is freed from the attention and worry of details. He has now secured the opportunity to turn his attention to non-personal industry, to industry as a movement, to the science, history and politics of his time. He thus is enabled to serve his country and age on a wider and higher plane. If civilisation is

only possible to wealth, industry as we know it is only possible at the incitement and under the guidance of civilisation.

Capital has a relation to the future. The industry of the present moment is conducted and conditioned by the self-sacrifice of the past. It is the measure and limit of present industry. The accumulations of the present age will supply the capital and fix the limits of the industry of the next. In a very real sense we determine destiny, the potentialities of our successors. We have thus a duty to the future not less than the present. There is such a thing as national selfishness and shortsightedness, the selfishness and shortsightedness of an age or a period. In these cases the existing age not only fail to provide for futurity, but appropriate to their own selfish pleasures what had been transmitted for the use of all time by their ancestors. They robbed not only their successors but their forbears. It is thus no frenzy of the imagination to contemplate the recurrence of evils and disaster to the world. Those that look around them and beyond them can prewise the vast capital requirements of the world even in the immediate future. It is for us to see that we accumulate capital not only for ourselves and our own age, but for those who will come after us, our children's children and succeeding centuries. We say further, that we remember no instance where the spirit and practice of thrift among the people once lost was ever restored. That nation or race perished, and a truer nationality or a more responsible race arose on their ruins. On the other hand, self-denial and prevision there, no disasters, however grave, finally overpowered them.

As to interest we do not propose to say much. It is the reward of previous self-denial. It varies in rate. The minimum accepted is always that in the investments of greatest security. Usually there are the government stocks and corporation securities of a country. After that come mortgages on landed property, railway debentures and mortgages on good house property.

Then the rate rises to the ordinary bank-rate for loans to their customers. The securities that involve no risk and require no supervision or change the interest paid for them may be regarded as pure interest. That pure interest again may be regarded as the lowest rate that thrift will accept voluntarily. Below that rate it will rather consume capital. The rate of interest between pure interest and 5 per cent. is in reality (in the generality of cases) the reward of supervision, special knowledge or opportunity, and provision for risk and danger. For instance, the difference between the return on government stocks and ordinary bank loans is $2\frac{1}{2}$ per cent. We are confident that the additional $2\frac{1}{2}$ per cent. no more than repays the additional supervision and risk involved.

The rate of interest is governed by the great law of supply and demand. If money is plentiful it is cheap. Lenders compete with each other for clients to utilise their funds. If money is scarce users have to bid against each other in the money market for their supplies. Money then rises in virtue of its scarcity. In the same way if there is a large supply of capital in the country, it is content, or rather compelled, to accept a very small return. On the other hand, if the business of the country is very brisk and the supply of capital somewhat short, there is a corresponding rise in the rate of its remuneration.

We have said that the interest on capital depends on the demand. Ordinarily the normal growth of the population of the world and the higher standard of living will provide for the employment of the present natural growth of accumulation. Thus the employment of capital is a passive position. Borrowers come to the lenders. Lenders never as yet had to condescend to seek for borrowers. But we have seen in our own day and country much capital idle and inadequately remunerated. Besides, we ambition a large increase in the capital of our country. We hope and strive to make all our working men savers and capitalists. And we are confident, nay certain, that our hope will be realised.

Now we must recognise the altered position of things. Capital must become aggressive; if not aggressive at least more active. It must become an active, not a passive, industrial state. We cannot shut our eyes to the fact that is the real secret of North America's superior industrial prosperity. Their best ability, their fullest knowledge, their noblest sons, not only enter industry but never dream of leaving it. The American millionaire believes that in no other phase or form of human activity can he so well and so wisely serve his country and the world. Without saying that the circumstances of the two countries are identical, or that our highest national ambition should be the worship of the almighty dollar, we do say that there is not the intelligent, prescient, anticipatory, initiatory power animating and guiding the capital of this country that there should be and might be. Further, there is greater outlet for British capital than any other capital in the world. In India, Egypt, South Africa, Australia, Canada, and the other colonies, we have not only outlets but imperative calls for the investment of vast sums. Do not let us have the unprecedented experience of having our colonies and dependencies looking beyond the mother country for brains, energy, knowledge and capital.

We will add here an observation upon credit. Not upon credit as a substitute for money. That position we have covered in treating of representative or substitutionary money. We mean credit as a system of lending; and only of that in a limited sense, as we have treated of the general question of credit under the functions and advantages of capital. We narrow our observations to the abuses and dangers that have developed themselves under the present credit system.

We begin by stating what is often forgot, that credit under no circumstances is a right to be claimed, but is a special favour extended to those specially circumstanced for its profitable and safe use. We think that at present credit is too easily obtained. Individuals beginning business think they have only to open a

small account with their bankers that they may be financed, not only to the extent of their requirements, but even of their demands. They think they bestow a favour on the banker by their patronage. They feel wronged when this gratuitous assumption is unrecognised. Now a person starting business with other people's money starts under a less sense of responsibility, a lower guarantee of care, a less full assurance of legitimate trading than a person who risks and economises his own personal wealth alone. It is only human nature. No person *does* exercise the same care over a stranger's property that he does over his own. Unlimited drawing power, and even limited drawing power, over other people's money leads to rash trading. It is closely connected, if not indeed identical with, "the hit or a miss" principle. It leads to underselling. A financed trader must keep up his supply of paper for discount, otherwise he would collapse. Such persons have not the power appertaining to the real possession of capital of waiting, of suspending operations during an unfavourable period. If a person loses his own capital he stops when it is exhausted. A financed house, however, will trade and undersell for years though bankrupt, and until the last sixpence of credit is exhausted. They have nothing to lose, they cannot be worse, things might still mend. They trade for years conscious bankrupts and swindlers, to the injury not only of themselves and their bankers and creditors, but to the whole body of honest traders in that branch of business.

Who pays for all this wild trading and underselling? The banker? Certainly not. He calculates his rate of discount on the average of the country's fraud and insolvency. Then who pays? In the first instance all those who have to use banker's capital, and in the last instance the general body of the people. It is the nation that in the end has to pay for all fraudulent and inefficient trading. The honest trader has not only to pay under the rate of discount his own interest on the capital borrowed, he has to bear his share of the losses

induced by other people, and he has also to bear the loss produced by the underselling and reckless business of his rivals in the common market.

All these evils point to the necessity of a remedy. We suggest a simple one; a return to the principle of the real possession of capital on the part of those entering on business. We propose that all business should be conducted on such principles. Buy nothing that you cannot pay cash for. Have nothing on your premises that does not absolutely belong to you. Sell for nothing but cash down. It is surprising if you try it how fast you can make money, how cheaply and profitably you can sell, how rapidly your business extends. You have none of the worries of business. You secure to yourself all the interest on your own capital, you make no bad debts of your own, and you pay no share of the bad debts and losses of other people. If the volume of business is less, the profit is greater, the cost of working it is less, and you conserve your energy and an unruffled temper for other and higher interests.

It may be said that to abolish all credit would prevent promising young men from beginning business. We do not believe in young and inexperienced masters. One of the necessary qualities of a master is experience; experience of his own trade and the world at large. And experience is not born in any person, it has to be laboriously acquired. An individual does well if he is at the head of a firm at thirty-four or forty years of age. But we would not go the length of absolutely abolishing all credit or the credit system. We would only start a rival system to the present monopoly of theory and practice of credit. The one would be a check upon and test of the other. The public would be better served. The best system would ultimately win, or they would jointly and severally supply a public want. We want another competitive form in distribution. Instead of one universal credit system we would have cash versus credit, and the devil, in the form of the public selfishness, would overtake the hindmost in the competition.

CHAPTER XXI

THE RETENTION OF WEALTH

WE devote a chapter to this new division of industry—the retention of wealth. If it is a part of political economy to treat of the production, accumulation and distribution of wealth, it is surely no less proper and necessary that it should treat of its retention. The division is broad and recognisable. It is a clear and separate and permanent state. It is governed by considerations and conduct different from those appertaining to the other divisions of industry.

We find when we treat of any specific phase of industry it bears within it a specific principle, a principle characteristic and colouring that particular phase. Looking at the retention of wealth broadly, we find that principle in prudence. The mere retention of wealth is less active and arduous than its production and accumulation. So we expect and find that the principle governing it is more of the nature of a general attitude of mind, that it has more of the passive in its character than the effective qualities of production and accumulation.

We will first disabuse the reader's mind of a very common notion that wealth is a static, a permanent condition; that an individual having once achieved a position of riches can rest on his oars, can float placidly and securely on the stream of his present income, without thought and without fear. We have to teach a different lesson. There is no absolute security for any income. It can be dissipated, stolen, and, worst of all, can melt away. In fact, the natural tendency of the most of wealth is to melt into unremunerative conditions

to their existing holders. Further, we say that no person or family will retain wealth for any length of time without the exercise of close attention, watchfulness and prudence.

We will best show how much wisdom and watchfulness is implicated in the successful retention of wealth by examining the life history of three of the safest forms of investment during the lifetime of those now living, say within the last sixty years. We will take land, communication and lighting. Now these were regarded as three of the safest forms of wealth. Persons invested in them for those they held dearest, for those they loved better than themselves, as the provision for their wives and children. They wanted absolute security, and for that were content to take the smallest return. We can point, in the first place, to the great fall of agricultural rent all over the country. We know farms that are now let at one-half the sum that they formerly rented at and at which they were purchased. We are not prepared to say that if you exclude urban land and lands in the neighbourhood of towns, of sporting and residential properties, that the agricultural value of the remainder is more than one-half the rent of thirty or forty years ago.

We will take another case. There are those who remember the old coaching and carrying days. What an advantage to those who owned lands on the main roads; how the clever people bought all the property along them, and built villages and even towns on their route. Clever people, the wisest and most prescient, said the folks must travel, as long as they travel they must use roads, and as long as they use roads they must benefit me and mine. What is the event? There is a new mode of travel away from all the old roads and lands and villages, and all the millions, ay, the hundreds of millions, invested in them have flown away. We hear people speak of the unearned increment belonging to the nation. There was no word in these days of making good the undeserved decrement.

We will take another case. What such a sure

investment as gas stocks? The people must have light. There is no other illuminant so effective and cheap as gas. We do not say that gas is superseded yet, but we say that gas stocks do not possess that quality of absolute security as an investment they did twenty years ago.

We mention these instances to show that the sure retention of wealth requires intelligent watchfulness. If there is no certain security in the reputedly safest forms, how much less is there in the great heterogeneous mass of what the public view with reasonable distrust.

What is desiderated by a wealthy person is to retain his wealth. Wealth is lost through three main causes. It is lost through extravagance and over-expenditure, through accident and fraud, and through the depreciation in value of certain forms of investment.

The first case is far away the most common, the most important and the most difficult to remedy. Extravagance—injudicious expenditure—has existed and been denounced from the beginning of history. It is still with us. It is a real peril at the present moment to nations and civilisations. That those who overrun their income will, with the most absolute certainty of any experience in life, involve themselves in certain ruin, suffering and reputation does not deter hundreds of thousands from rushing on their fate. The motivisation leading to such a catastrophe must be either very subtle or overwhelmingly powerful. There is no doubt that when an individual retires from the ranks of industry his children live into a cycle of interest in which practical knowledge of business is carefully excluded. Besides, it is a great truth that we are not naturally born into industrious and careful habits. Industry is a discipline, an imposed task, not lightly or willingly borne. The condition of wealth leads its possessors into the atmosphere of pre-industrial times, and lets loose those emotions and that class of conduct antecedent to our industrial civilisation. Prudence is despised as savouring of the vulgar toils and cares and

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duties of the commonalty. This is a very real reaction of sentiment, and is the natural reflex of the total unloosening of the discipline and duty of common work. Besides, nothing is so subtle as the gratification of luxurious tastes and habits. A person beginning with champagne to lunch will soon find it difficult to return to the humble bottle of beer. A lady who has once accustomed herself to silk underclothing will not readily return to the colder and heavier linen garments. Among the wealthy wealth is the general criterion of social grade, and wealth is tested by income, and income is judged by expenditure. Now persons who have not been tested would think it impossible that a person would incur for a temporary and fraudulent appearance the certain penalty of ruin and discredit, but so it is, and it is this fact, that not even ruin financial and social can instil prudence, that shows the strength of the temptation. We say, then, that the children of the wealthy are brought up in a circle where prudence and economy are despised as the marks of a vulgar and sordid mind. The first step, then, or rather condition, of the retention of wealth is to instil and inform the public opinion of the holders of wealth of the duty of prudence and economy, of its necessity and of the honour of it. What higher duties and schemes can a person aspire to if he has dissipated the family fortune? There is too much looking back in life and not sufficient looking forwardness. The past is gone, and what there is of it as compared with the future is as a single day in a strong man's life. We are too proud of our ancestors, whom we should all be so much ashamed of. The true ambition is that merged in the interests of the future—in our children and our long line of future successors on whom we have bestowed the opportunities of services, ambitions and high thoughts for their country and the world.

So much for the state of mind, the practical rule of conduct is never, under any circumstances, to exceed your income. If in any one year your expenditure exceeds your income by one shilling, you have ceased

to retain your wealth intact. If through some unfortunate circumstance your income has become diminished, recognise the fact at once, do not trust to some Micawber-like hypothesis of something turning up to take its place.

The second cause of the loss of wealth is accident and fraud. Sheer accidents are few. Still they are known. Sea encroachments, floods on great rivers, revolutions, the dishonest repudiation of national engagements, are all cases of unpreventable private loss. So are frauds and failures perpetrated by trusted advisers and institutions. This brings us to our second practical advice. As these accidents are unforeseeable their rare occurrence should be provided for by a system of regular saving or insurance. A person that spends all his income, though he does not exceed it, is unlikely to retain all his wealth. To retain the capital sum intact some provision to make good natural loss is necessary.

The last great cause of loss of wealth is that of insecure and dangerous investments. For instance, we would consider investments not provident that depended upon business concerns engaged in passing, or at least transient, tastes, or upon trades without the full consensus of the moral opinion of the time. Shares in companies formed to work new inventions or patents are risky. Businesses depending upon the exceptional talent and experience, or great luck of particular individuals, enjoy only a very temporary success. Also concerns in which the largest proportion of the capital employed is not sunk in fixed and permanent form, but depend on the technical skill of experts. We do not decry these forms of investment; but they require the whole time and attention of the investors to look after them, which wealthy persons, or at least their children, seldom do.

Most persons inherit wealth. It has come to them from those who had the capacity, courage and knowledge to produce and accumulate it. It is therefore not wise to change an investment without a reason. The

holder of an investment sees all the faults and dangers of his present holding. He sees all the attractive points of a different one. It is well to remember that when he has as full an acquaintance of the new investment as he has had of the old, the investor will probably find there is not much to choose between them.

Do not put all your eggs in one basket, however large. Judiciously distribute your capital over several forms. There are companies in existence wherein the shareholders have a common interest in a wide circle of investments. These companies have hold of a sound principle.

It is important that holders of wealth should take a constant and intelligent interest in their investments. Not only should they see once a year their securities, and check their numbers and regularity, but they should attend the meetings of the shareholders. They should also docket all their reports and compare each year's report with its predecessors. If it was only the added experience and the habit of practical grasp over the ordinary affairs of life, this habit is invaluable and helpful to the individual in every walk in life.

Need it be said that no person wishing to retain his wealth will take or receive credit in any form. He does not require it and he pays sweetly for it. If a wealthy person pays cash, or at latest once a week, Monday morning at ten, the state of his bank account will always show him his exact current financial position. Thousands find themselves in embarrassments because they do not know their real position till too late, through taking uncalled-for credit.

But when all is said and done, the real remedy for loss is provision for its occurrence. Unless in the very best of stocks, stocks with a national guarantee, there will always be some loss. A prudent person will never spend all his income and leave nothing for contingencies. If it was only for unexpected personal contingencies, the unforeseen in his social life, no wise person would do it. The question is, what is a prudent and wise exercise of present self-denial? We should say

in the case of persons whose income depends upon investment in good 4 per cent. stocks, the provision should be one-fourth of their income. Persons holding in 3 to $3\frac{1}{2}$ per cent. stocks should set aside one-sixth. These figures represent what we think is the minimum provision every prudent and wise man will set aside annually for risk and loss or unforeseen contingencies at *least*.

CHAPTER XXII

THE UTILISATION OF WASTE

THE utilisation of waste is a division of industry in itself. No doubt strictly all the phenomena we propose to treat under it would come under the higher law of parcimony. It would if treated thus be not less a real division. But we wish to devote a chapter to waste as a division of and in the practice of industry; because in economics universals pure and simple, abstracted from all concretion, cease to bear any resemblance to their everyday and working aspect, and to be practically useful as industrial guides. So that in treating of the phenomena of waste, while recognising them as covered by the general law of parcimony, we present them as they appear to us in our everyday experience, and as we picture them in our imagination as factors of thought.

It may be said surely the phenomena of waste should be treated as a branch of production, economy of force and material being of the essence of efficient production. But it is not so. The prevention and utilisation of waste is as important in consumption as it is in production, and as important in production as it is in consumption. So when a principle cannot be treated under any other division in industry, or is characteristic or common to more than one of the already existing divisions, we recognise it as necessarily a division in itself.

If we create a new division in industry it must have a *special* characteristic, a characteristic of recognition and justification. That we have said we find in

parcimony, but parcimony in the form of intensiveness and immediacy. It is opposed to extensiveness, to the seeking after mere size and width of industrial operations. It seeks to exhaust all the potentialities of the immediate present before going further afield. It is an important attitude of mind in the individual. It is still more important to the nation. It means only to send your sons and capital abroad when you have exhausted every form of possible profitable industry at home. It is clear that as an industrial policy you have extensiveness or intensiveness as a choice, or a union of both with a predilection in favour of one or other as the mainstay or point of industrial initiative.

Surely the infinitely little is as great a fact and as wonderful as the infinitely great, surely the revelations of the microscope are as astounding as those of the telescope, and as necessary in the *schema* of existence. The basis of life organisation is molecular. In the psychic world there is a type of mind corresponding to the minute in physics, and a corresponding type of mental culture. There is a form of mental power and culture characterised by depth of insight, intensiveness of research, that intellectual persistence on a line of inquiry that has exhaustion of content as its goal. This type is the opposite pole of extensiveness, width of grasp, power of generalisation. The one type seeks a final analysis, the other an ultimate synthesis. Thus this policy of intensiveness in industry has its counterpart and sanction, not only in the order of the universe, but in the experience of our higher intellectual life.

Now mark here we have no thought of antagonism to extension in industry, to an ever widening of the field of individual industrial operations, to an ever larger foreign trade. We only say that intensiveness is of equal, if not of most importance. And at the present moment it looks as though that great truth was being forgotten, that nations are looking primarily to a foreign trade to find employment for their populations.

That is the opinion of Dr Andrew Carnegie, and as the opinion of a person unusually successful inside practical industry it is worth bearing in mind. We pay more attention to the spread of the branches of the industrial tree than to the depth and extent of the growth of its roots and grip in its native soil. We notice that there is a school of economists who are opposed on principle to the perfect national industrial synthesis as making a nation self-contained, independent, and isolated from outside world interests. They would aspire to national division of labour, each nation cultivating a specialty in industry, and the world interdependent. We make two observations upon that position. In the first place, another country developed from without, with to it foreign capital and skill, ultimately comes to possess itself of all that has been sunk in it. So that foreign trade can only be a temporary advantage existing while these new fields are being developed, and continuing only so long as fresh fields and pastures new can be discovered. And, in the second place, all the industry and resources developed in a country remain with it for ever as its natural right and possession. Having said that, we sum up by saying that both are necessary for *present* healthy national and world development, but the first effort, the primary consideration, is the intensive policy, the development of all possible home industries and resources first.

No mode of industrial purpose is so economically useful as the prevention of waste. And it is easy to see how it is so. Production is an expenditure of energy physical and psychic, and the amount of production is proportioned to the amount of energy expended. But it is the expenditure of energy which we possess over and above that required for the service of organic function. To live, to digest and assimilate, to keep alive the living organism requires energy. All our thoughts and emotions are calls upon our energy. For industrial purposes, then, the energy expended is already a supra-energy, an energy existing

only after the satisfaction of a previous call. Of all forms of force known to us human energy is the most precious and useful, and its conservation is, in all circumstances, a matter of supreme importance, not a volt of it to be carelessly thrown away. Now by the prevention of waste in effort we secure one or other of two desirable objects. We either secure the same object with less expenditure of energy and thus conserve it, or we secure an additional object or objects with the expenditure of the same amount of energy. To put the matter another way, we save the expenditure of physical energy through increased intelligence, fuller knowledge and wiser adjustment. The expenditure of wise thought is less economically costly than the expenditure of more energy.

It is a vastly important object in itself, the effecting of a saving in the total expenditure of human energy. We cannot doubt we are very near the top strain of healthy life in our higher civilisation. With our artificial life, our ambitions and anxieties, the everlasting call upon our sympathies and indignations and highest intellectual energies, we are living on a plane of mental strain never before attempted in the world's history. Remember our modern industrial, scientific, political and artificial life is only a century old. A hundred years is a short time in a nation's history. For how many centuries will we be able to bear the present strain? Half our population are now city born. The whole population of the country are living in an environment and atmosphere of artificiality in former centuries only the experience of the aristocracy. There are a hundred symptoms that we are nearing the limit of safety. The deterioration in the physique of our manufacturing population, the reduction in the chest measurements of our recruits, the increase of insanity, the prosperity of doctors and druggists, the reduction in the birth-rate, these and a thousand other circumstances lead us to the conclusion that an economic advantage obtained by the expenditure of a less amount of energy is a greater advantage to

society at large than an additional call for a further expenditure of energy.

Lest the reader impugns this pessimistic tone and assert it as arising from a dyspeptic habit and deficient exercise, to take him along with us we say the economising economic energy will enable us at the same cost to achieve additional objects of desire and to gratify other ambitions, that we shall have more time and energy to devote to ultra-industrial objects. And it is true. The real triumph of modern industry is that it relieves the toils of industry, that it sets free other thoughts and purposes which formerly were absorbed in the struggle to live. Only the supra-industrial is at the disposal of our higher civilisation.

This policy of industrial intensiveness takes the practical form of prevention and utilisation of waste. And this prevention of waste again falls to be treated under the following six heads. These are (*a*) the prevention of the waste of productive energy itself; (*b*) the limiting of waste in consumption; (*c*) the utilisation of all natural materials at hand; (*d*) the utilisation of waste and bye-products; (*e*) the economy of space; (*f*) the saving of time.

(*a*) The waste of productive energy itself. To begin with, we point out that with many active and energetic natures there is often unnecessary expenditure of energy beyond the requirements of the case. Still this is not the general experience. More often is the waste caused by imperfect adjustment. Only the perfectly adjusted lives and is useful. Machinery, implements and tools are often of a size and weight altogether beyond the requirements of the case.

Many trades are overmanned and the surplus workers supported in idleness by their respective trades to the cost of these trades, and ultimately, of course, at the cost of the community at large. There is no efficient vigilance over the entry into industry. Many persons, capable and qualified for higher industrial labour are employed in simpler forms of work. There is also a lack of wise apportionment of labour, powerful men

doing work quite suited to the capacity of weaker individuals and women and boys.

Many occupations which do not require great skill or energy are overloaded. For instance, in distribution shopkeeping is extended out of all reasonable proportion. Look at the immense numbers, the size and cost, the fittings of the shops in our towns. They are vastly in excess of the wants of the community, and the community has to pay this unnecessary cost. It is a mistake to suppose that this superabundance of competition is a healthy competition and an advantage to the community. As a matter of fact it raises the price and cost of commodities to the consumers all round. The shopkeepers must live. Their prices and profits are calculated on making a living. The smaller ones cannot reduce their profits below a certain point. The larger ones have no call to reduce their profits below those of the competition of their humbler competitors. It would simply be killing the goose that lays the golden egg.

Thus we have said sufficient to show that the adjustment of labour requires more attention than it has yet received.

(b) The limiting the waste in consumption. To reduce the sum of human need is to reduce the amount of imperative call. At the very basis of consumption there is waste. We all eat too much food and drink too much drink, more than is necessary to keep the body in health, indeed as much as keeps the body in bad health. The result is a vast expenditure of energy to rid the system of imperfectly-assimilated food, or overcharged blood, and unhealthy accumulation of tissue and toxin. Neither is our system of dietary wisely arranged. We eat by habit and to gratify taste, not to nourish the body scientifically, with the result of much waste. Then our system of preparing food is wasteful, especially among the working classes. It is not sufficiently recognised that cooking is the first stage of digestion and requires both knowledge and care to fit the food for subsequent easy and complete assimila-

tion. An individual will live and thrive on one-half the amount of intelligently-selected and thoroughly-cooked food than he would find necessary when carelessly bought and imperfectly prepared. These are the vast sources of saving or economy of economic energy. The reason is that, though the individual saving is small, yet, as these economies affect the whole mass of mankind, they amount to immense sums in the aggregate. We think that we are quite within the mark when we say that, in this country at least, a shilling's worth of food is wasted per head per week. Some may waste less and others more, but that figure, we are convinced, is within the average of the waste of the country through over-feeding, imperfectly-arranged feeding, or badly-prepared food. Yet a saving of expenditure of one shilling by 40,000,000 people, the population of these islands, represents the saving of the gigantic sum of 104 millions of pounds annually. It may be said we do not need this minute economy. It is true, not yet. But we might, and it is as well to point out where much of our vast expenditure of economic energy and means is unconsciously frittered away.

(c) The fuller utilisation of all natural materials lying at hand. We shall mention three great natural agents that do not seem adequately utilised. There are many others, but we confine ourselves to three of the most clamant examples. Coal, for instance, when burned for mechanical power, seldom returns a mechanical equivalent of more than 10 or 12½ per cent. Now, though we believe we will soon see a form of chemical force superior as a producer of energy to coal, we see no reason why we should waste an ounce of that fuel in the meantime. That there should be 90 per cent. of waste to utilise seems to afford a large opportunity for inventors. May there not be a more useful form of boiler than the present, or the coal presented to the furnaces in another form or associated with another substance? We can collect heat by lenses and deflect and guide it by mirrors. Seeing what the dynamo has done for electricity suggests the possibility of heat con-

ductors and accumulators. Anyway, it is important to always din into the ears of the public that only 10 per cent. of coal under combustion is utilised. A new idea or suggestion is sure to occur to someone sooner or later. Then we have our vast accumulations of peat to utilise. There is a vast source of wealth there untapped. Besides, when the peat is utilised a more permanent source of wealth appears in a cultivatable and potentially fertile soil. So also are the vegetable products surrounding our shores. We do not speak of the cultivation of marine forms, though that will come in time, but we refer to the existing millions of tons of sea forms going to waste along our coasts and islands every year. We know they are edible. They have never been adequately experimented upon as food for cattle when mixed with other forms. Nor yet have they been tried under chemical process as a basis of albumenoid food.

(d) The fuller utilisation of waste and bye-products. A clearly-defined policy of economy is the return to the soil of all organic substances drawn from it as far as may be. If we do not, we must supply a substitute. The process by which nature transforms inorganic substances into organic forms is a subtle but well-established process. The coarser mineral particles of the soil are disintegrated by mechanical agencies, the principal of which are attrition, heat and frost; and the fine particles thus formed are further dissolved by acids or other chemical agents in the soil or in the atmosphere. There and therein the physical basis of life is laid, and that physical basis is micro-organisms which have not yet assumed the forms and functions of protoplasmic cells. The primary and perfect cell next appears in this micro-organic nidus, and the formation of the organic synthesis begins. Man is nutrated on both vegetable and animal forms. But the basis of life common to vegetable and animal forms is the primal cell. When an organic form is dissolved, the primal elements return directly or indirectly to mother earth, there to coalesce under new conditions and again take part in the same or a wider cycle of organic evolution.

But all through organic life individuals are exhaling or excreting microscopic forms which go to swell the nidus of micro-organisms forming the dust and seedbed of cultivation. We can see that this process and capacity of organic growth at the expense and through the means of inorganic and micro-materials is one, or ought to be one, of geometrical ratio. Every accretion of organic matter is a stepping-stone, not only to its replacement, but its geometrical increase, every succeeding age seeing a vastly increased increment in the sum of primal-organic forms. So far from an old country being exhausted in the service of humanity, it should show a natural increase of fertility. If it does not, then we say with Hamlet, "There is something rotten in the state of Denmark." This condition of organic potentiality would have covered our earth with a vastly greater mass of life were it not the destruction and waste of the nidus and primary life cells constantly going on. Rain is the principal cause of the depletion of the soil of the essential elements of organic growth, chemical and micro-organic. When this depletion can be prevented or restored the fertility of the soil is one of steady increase. It is thus of the first importance that all organic waste should be returned to the soil under cultivation to replace natural and artificial depletion. At present we run all this waste material into the sea or burn it. In either case it is lost to the country. When Mr D'Israeli announced a policy of sewage to the country he was laughed at. But in that matter, as in many others, he was wiser than his country and time. It is a policy worthy of a great nation. Not less than 12,000,000 tons of organic waste ought to be returned to the soil every year in this country, which is not only wasted, but urgently wanted. If it was not wasted we would not only save an immense sum of money annually, but we would at the same time restore the natural geometric increase of the fertility of the soil now interrupted in its natural sequence.

We are still wasteful as regards spent or bye-pro-

ducts. The advantage of saving and utilising these is that they are objects upon which human labour has been already expended. To utilise them is to economise labour. If you do not utilise these waste objects you have to manufacture from the beginning, from the raw material. Now, a waste or bye-product, if organic, has been reared from the soil with at least a season's growth, and rent and labour expended on it. If it is a mineral object, it has at least been mined and smelted. If it is a foreign object, it has at least been transported at some considerable cost to this country. In all these cases the waste product lies to hand with all these advantages belonging to it as a start. Take as an illustration the manufacture of children's toys. The most wonderful thing about these is their ingenuity and cheapness. They are all manufactured from tin waste—sardine and salmon tins, and the like. Now if the toy manufacturer had to produce his toys from new tin sheets the price of the toys would be at least double. Or look at the difference in the price of paper since it could be returned to the mill and repulped. The testimony to the advantage of this process is the sixpenny novel and the penny newspaper of sixteen pages. Take a walk through our streets in the early morning and see the quantity of useful material thrown away as waste. Cinders and ashes, paper in large quantities, tins, bones, feathers, skins, old boots, bottles, and sometimes old clothing. All these are destined for the destructor, an immense, costly and expensive institution, built and maintained to destroy the intrinsically useful. Why, the mere organised gathering of these materials is sufficient to support all our vagrant and degenerated labour. What is wanted is official supervision and organisation. These very poor lack initiative and the public confidence. They thus labour at a terrible disadvantage, which destroys their sense of hope and self-respect. They find that the ranks of crime are less arduous than humble and honest labour. These poor would respond cheerfully to supervision and guidance that would give them again an honest

and recognised place in society free from the contempt of supercilious opinion. This is a matter demanding the attention of local authorities.

(e) The economy of space. Utilisation of space requires a merely passing notice to preserve our process of synthesis. It is a useful though not yet pressing consideration in economics. There is a considerable waste of space about our streets and towns, our roads and farms, our railway banks and foreshores. Space, however, is only a pressing problem in relation to the treatment of the business centres of our great cities. Much is being done by private and corporate effort to utilise all the space within an effective radius of the main centres of commercial activity. It is, however, all on the lines of our old-fashioned street system. What we need is a municipal scheme on new and bolder lines. We require footpaths duplicated above for foot passengers, and a new range of shops opened on the first flat, leaving the present footpaths for bicycle traffic. The bicycle has come to stay, and we must provide for the safety of that rapid mode of transit. Our main street could also be doubled for cab and omnibus traffic, leaving our present roadway for carts, drays, and other heavy forms of traffic.

(f) The saving of time. This is an admitted aim and duty. We have nothing to add to the consensus of opinion. It is best secured by a habit of mind born of firmness and precision. Nothing superinduces that habit of mind and makes it more practically effective than devoting half an hour at night to think over what is to be done next day and the best way of doing it. It is wonderful the confidence it gives during next day's business, and the immense saving of time through its previous orderly arrangement.

CHAPTER XXIII

OF CONSUMPTION

CONSUMPTION is a division of industry. It is a division because the phenomena of consumption cannot be described under any other division, and in its own description embraces none else of industry. We have little to say of it. It is simply a great outstanding fact. We mention it to preserve before our readers the logical unfolding of the synthesis.

Consumption is important in virtue of its dimensions. It is the greatest individual fact in industry and in life itself. It has two phases. Consumption of necessities and consumption of luxuries. General consumption will always depend upon the spending power of the people. When work is scarce and wages small the simple supply of needs will be the serious care of the people. When work is plentiful and wages high the people will naturally turn their thoughts in the direction of fuller gratification, with the result of a great increase of general consumption. Though there is a limit to the consumption of necessities of life, given the means there are no limits to the consumption of luxuries.

Consumption is of the purpose and the satisfaction of industry. Industry begins as the process of making something to consume, and it ends with the consumption of that something. It is the final fact in industry, its consummation. It is the measure of the expenditure of economic energy. The greater the demand for articles to consume the greater call upon productive powers. Consumption also determines the potential of accumulation of wealth. It is only the unconsumed that can be accumulated.

The simple fact of consumption is a vastly important fact, as well as a great one. What we consume, what we eat and drink and put on, is a vastly more important thing than what we think and do. What we consume is of us, is absorbed or super-imposed. If a person thinks right and acts decently, if he does not consume good food, wholesome drink and warm clothing he will die. If he does these things, consumes good food, drink and clothing, and yet thinks nonsense and works his physical energies on foolish purposes, he yet will live. What we consume is a most important thing personally, and still more important nationally. A people inadequately fed, or even over-fed, or fed on unwholesome or unnatural food, will have its destiny more affected by these circumstances than by any other. Writers upon political economy have not much to write about consumption as a fact in itself, not because it is not vitally important, but because the importance of consumption lies in the forms it takes; and the factors determining these are matters of taste, manners, morals and science; and all these lie outside the domain of industry. Life itself is wider than industry, though after life itself industry is the next greatest fact. It is science that must be our guide in dietetics, as it must be taste, manners and morals that are our guides in the consumption of the supra-necessary. That wise consumption lies at the root of industrial and national prosperity is a fact, but the circumstances of that consumption are governed from outside of industry, not from within the movement itself. Consumption being the contemplated purpose and achieved end of industry, it only presents itself to the notice of industry when the initiative of action takes place. As the achieved *end* of industry the act of consumption again removes the phenomena beyond the scope of industry. Consumption thus touches anterior purpose on the one side, and the exhaustion of the dependent phenomena on the other.

Without trenching upon what is outside of formal industrialism, we see two great dangers amid the present

forms of consumption. First, there is the great growth in the artificial character and taste of the food and drink we consume. We seem to be losing our relish for plain food in natural and unaltered conditions, leading to a morbid craving for large quantities of highly-seasoned and artificially-flavoured foods. Of course it was always so among an aristocratic section of the community. But now it is spreading throughout the people. All these tinned and smoked and dainty foods are correlated to a morbid and, in time, to a diseased condition of the digestive organs.

The second remark is like unto the first. It is as to the immense quantities and sums spent upon admitted superfluities—to the immense consumption of tea, beer, spirits, tobacco, etc. We are not frightened at the money cost involved. It would be a bad day for society when no thought but the saving of money came to be the sole purpose of life and living. But we are concerned about the effects of these hundreds of millions' worth of deleterious substances swallowed and inhaled by our countrymen. It seems to us, merely regarding the millions of tons in weight involved, that we are no longer human if we escape permanent injury. We know we are right when we say there are millions who have never tasted water, plain cold water, to their knowledge, and who cannot remember the day when they began to smoke. We protest against the constant and growing artificiality of our present existence in our most highly civilised, and, as they call it, most cultured nations; heaven save the mark! These are the two most dangerous facts in consumption which we leave to the more learned attention of men of science and public moralists.

As all divisions of industry have their special characteristics, we need not say that the special characteristic of consumption as a division of industry is physiological, that is, it is the union of industry and physiological function.

CHAPTER XXIV

OF THE ORGANISATION OF INDUSTRY

THE universal particular is the individual. In him is the development of the past, the actuality of the present, and the imminence of the future. It does not follow, however, that the *economic* unit is the individual. The economic unit is the individual as he appears in industry. Industrialism is itself a limitation on the common experience. The necessary corollary of limitation is the drawing in of the phenomena from the severe simplicity of universals to a partial synthesis or combination of two or more primaries which, while recognisable in their conjunction by the practical reason, are nevertheless combinations analysis can dissolve into simpler or more primary forms. Thus when we take the individual worker as he first appears in effective industry, we find him normally not in a state of personal independence, but economically efficient only as a member of a family, the services of which family are indispensable adjuncts to his own efficiency. We thus take as the economic unit, not the individual worker, but the worker and his family; that is, the worker and his wife, or the worker and his parent, or the worker and his next best substitute, his landlady. Though we can imagine an individual in exceptional circumstances able to support himself in a condition of absolute economic independency, these cases are very rare and have not the condition of economic efficiency.

We have said the economic unit is the universal particular particularised. We turn to the other pole of the movement, the universal of industry, the particular

universal, and we find it as a movement and unit in the state. That is the other pole of the economic unit, of the universal particular; the worker is the universal particular. But a particular universal subject to the limitations of industry, the state as containing all industry or the more extended conception of the state as particularised by the limitations of the industrial function. Thus, then, viewing the organisation of industry as a whole, it is, and all of it *must* exist between the economic universal particular on the one hand (the individual worker), and the economic particular universal on the other, industry to the point of mergence with the state.

Land, labour and capital are the foundations of the industrial movement. At our present point we set aside land. Thus we are left with two possible lines of organisation, labour and capital. Starting with the industrial unit, he can only have two processes of organisation. He develops as a worker pure and simple, in which case his future interest for us partakes of the organisation of labour; or he develops into a capitalist, in which case he joins in all the complex of the capitalist movement. Now, viewing the industrial unit as the subject of organisation, he as a worker develops as a trade and trade organisation. In the trade union we have the organisation of labour, and organisation as just and necessary as the organisation of capital. Passing upwards from these forms, and still on the labour side, we have a number of combinations seeking to discharge more than one economic function, with the intention of securing a share of the remuneration of the additional industrial functions undertaken. These are co-operation in distribution, profit-sharing and co-operative production. On the other hand, when the industrial unit becomes a capitalist he develops through the individual trader to the firm, and thence to the company, and finally to the corporation employing thousands of hands, and manipulating millions of pounds.

All these organisations have their respective uses.

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An efficient and full economic synthesis will embrace them all, will welcome them all. In a nation's industry there are always niches which can be usefully filled by special organisations adapted to the circumstances. We cannot have too many competing forms. They keep rival forms in a condition of healthy activity. They furnish experience. It is to be noticed that much mistaken controversy has arisen over the success or failure of these individual industrial forms. From their individual success it is proposed to extend the application of their principle to all industrial enterprise. When they have failed, a pessimistic panic seizes the country and we are warned of another national danger. It seems to be forgotten that there are many forms of truth in economics as well as outside of it, and that the truth of one form does not imply the error of the others. We forget coexistence as a great fact in actuality. We all seek for the supremacy of our own conception and the obliteration of all other forms. Variety of form or variety of effort is of the essence of healthy industrialism.

The common generalisation of these various industrial forms is that of individualism and collectivism. These are the two poles of form. They are antagonistic principles. The advance of one form is at the expense of the other. Between them there are many forms partaking to a greater or less extent of both. In the case of individualism most stress is laid upon the personal element in production. The independence, the personal initiative, the character, the diligence of the individual worker is the predominant consideration. There is co-operation among these units, but it is of a clearly marked voluntary associative character. Collectivism is founded on the view of the superiority of united, regulated and, though not openly avowed, of compulsory effort. Voluntary associated effort is not collectivism. It is individualism. If the growth of individualism is the pronounced reaction from the state interference and compulsion of past times, collectivism is no less the reaction from the defects, apparent or real, in the fierce competition of individual effort. It is

always so. We are more impressed by defects and grievances than our general condition, though itself favourable. We take the general run of favourable events as a matter of course, and without observation, but we notice the slightest jar or hitch in its course. We notice the pebble that produces the ripple sooner than the placid flow of the stream itself. Russia has lived under a continuous autocracy. The evils of that rule are reflected in the strong attraction which extreme individualism has upon the young and inquiring mind of Russia. They look for their country's regeneration in the antithesis to autocracy, in individualism bordering upon anarchy. In the United States, again, individualism suited the genius and circumstances of that energetic people. They see many evils associated with individualism. They have had no experience on the other side. Now there is a strong current of public opinion toward collectivism and state interference. But indeed the difference between individualism and collectivism is deeper than a matter of observation and judgment. It is typical of individual types and of racial characteristics. A strong personality will always incline to individualism; a weak one to collectivism. It is only weak nature that assumes chains and longs for guidance and control. It is the same in religion. There are races to whom the responsibility of individual judgment is irksome and painful, to whom authority and guidance is more natural than the innate independence and moral personal responsibility appertaining to perfect manhood. To all these people the weakness of their individuality will always invite restraint and the fetters of authority.

Taking economic experience as our guide, we say both principles are necessary for efficient economic development. We require much strong individuality and individual effort. But there are functions to be discharged and results to be attained which can only be brought about by collective effort. And not only collective effort in the sense of voluntary associated effort, but also in the sense of state agency directed to economic ends. It is important the standpoint from

which we view the situation. Shall we assume individualism as the constant and collectivism as the variant; or start with collectivism as the normal position from which exceptions on individual lines are to be permitted. The point of view is important, as the antagonistic principle will always be regarded as the variant that has to justify each successive development. We have no hesitation in pronouncing for individualism. Industrialism is among other things a discipline, a development of character. Individualism strengthens individual character, gives courage, self-independence and initiative. Collectivism fosters obedience, dependence, the mind and character of the slave. Economic efficiency is directly correlated to individual interest. The interests of the community are not such powerful incentives to energy and vigilance as the interests of the individual and his family. Like the law of gravitation, economic sympathy, interest and power decreases by the square of the distance separating the function and object from the individual. These universal laws and ratios are equally operative in human affairs as in the material universe. What more common observation or advice in private or public discussion than to give individuals an interest in their business or their work, showing that the appeal to the direct interest of the individual to be the most powerful incentive, that individual interest is the crux of the problem, and therefore that individualism is a more effective economic force than collectivism.

Individualism is nature's logical anticipation. Individualism was nature's primal economic form before the growth of collectivism, which in its ulterior development encroached upon it and stifled it. Thus the reaction against the state collectivism and interference of the Middle Ages was the return to the pre-artificial conditions of industry. It was the resolve to get rid of the fetters super-imposed upon the individual initiative and efforts of the people.

There is no doubt that there is a vague conception afloat as to collectivism, that it bestows upon all of or

in any organisation the power of its ablest and best. But that is not the case. Capacity, knowledge and industry are not transferable qualities. They exist individually. The strength of a chain is the strength of the weakest link, and no organisation that admits or depends upon a weak link is any stronger than that link.

But it is said that industrialism viewed under the latest light and experience is in this position. Individualism is the particularity of collectivism as the notion, and therefore as the notion is to the particular of higher and wider validity so is the state (the state industrially related) superior in validity to the industrial particularity (which in its concrete aspect is individualism).

Well, we might say that the particularity of individualism is in itself as implicitly and foundationally notional as that particular universal, that collectivism, we call state. It cannot, therefore, be that there is any necessary notionalty contained in the idea of the state which should be the imperative call and sanction of the logical idea to a particular theory of life and practice. This alleged superiority of state industry advocated because of the supremacy of the notion over the particular is therefore non-existent, because it is a quality common to them both. We are therefore in this position; given no inherent notional superiority to either form, how are we to determine?

Now if this notionalty was a real ultimate there would be nothing more to be said. But the state as notion is not a real ultimate, not a fixed unthinkable beyond, ultimate. We could conceive of the state as we know it superseded by another form of social organisation, and even by a superior form of present organisation. It is thus, then, that the idea of the notionalty of the state as the final in industry, as the indubitably highest form, is a gratuitous assumption, not an inherent logical determination. This notional necessitarianism is thus invalid, and is no supra and independent authority to the experience and prudence of the time. We are thus

perforce returned to the guidance and sanction of experience in our determination of our policy, which we have already said is in concrete experience individualism.

But though we view individualism as the constant in industrialism, we recognise that a growing amount of collective work must now fall to be discharged by the state, and that modern conditions have so altered the structure of the state that objections and difficulties, formerly serious barriers to effective economic state functions, have been largely modified and in many cases abolished.

One of the principal objections to state control in former times was that it strengthened the power and the number of the bureaucracy. And in those days the state was the real enemy of the people. Every function assumed by the state was an additional rivet on the chains of the people, while every new function invented and invested in the general body of the people was a step in the direction of the people's liberation. So far as this country is concerned all that is happily changed. Through our representative institutions, political, social and commercial, we have an efficient check upon the honesty, vigilance and industry of all our state functionaries; and our official classes have now lost the sense of official caste, of interests separate from the well-being of the community they now consciously serve. So much is this the case that there are no greater sticklers for the maintenance of the constitutional rights of the people than the great body of our public servants, and none, as a general rule, more obliging and informatory within the limits of their duty. Any proposed increase of state economic functions, therefore, is free to be discussed on its economic merits alone, without those nightmares of danger to political liberty which haunted the imaginations of our grandfathers.

There are economic functions now carried on by the state which we know could not be as well discharged by private effort, if indeed they could be discharged at all. There are industrial services in which the whole

mass of the population is interested. Much of the postal service, for instance, used formerly to be in the hands of private individuals, and it is now wholly in the hands of the state. It is a strict government monopoly with great advantage to the nation. The telegraph and telephone systems were originally private undertakings. They are now merged or in process of merging into the hands of the state, with satisfactory results. Lighting by gas and electricity, the water supply, tramways, all industrial undertakings, have been assumed in charge by our local authorities. It is too soon to say whether these undertakings will be economic successes or not. They are still on trial. In the meantime the official accounts of these concerns are in the main satisfactory. Though we must remember that corporations borrow at 3 or $3\frac{1}{4}$ per cent., which is a very different interest from that exacted by the private speculator. If the only saving to the public is that of interest without any increase in efficiency or reduction in cost, then state or municipal industrialism is a failure. Against these instances of favouring, or consistent with, or not antagonising collectiveness, we must remember the case of the royal dockyards and shipbuilding. The royal dockyards can neither compete in efficiency or cost with private shipbuilders, despite the fact that they have all the resources of the state at their back. We must also remember that the largest industrial undertakings in the country are the railways, representing a capital outlay of 2000 millions, are the result of private enterprise and are still conducted as private enterprises on the lines of greatest efficiency. Our extension of industrialism on state lines is therefore still of the nature of an experiment which requires to be strictly watched and guarded.

There can be no doubt, however, as to the advantages and legitimacy of the state construction or aid to railway, canal and harbour schemes when needed, and when the local people lack the initiative and means, and when the return would not repay the private capitalist and yet would so improve the district or advantage the

body of the people that the state would be advantaged and enriched to the extent of the capital invested. For instance, it is a common saying that a railway makes its own traffic. That is, gradually the trade of a whole district increases when a railway is put through. The farmers can send more to market, can bring more material to improve the soil, such as lime and artificial manure and feeding stuffs. The farmers get richer and lay out more capital on the land. They employ more and better labour and pay more wages. That again increases the local trade. The blacksmith, the butcher and baker, the tailor and shoemaker all benefit. It is evident that the return to the railway shareholders represents but a small part of the increased national wealth brought about by the introduction of the railway. Thus in poor districts in Britain and Ireland railways might be built by the state, which though not showing a profit on the railway receipts alone, would from the stimulus given to other resources become economically profitable. They would not pay private enterprise; they would pay the state.

Another case in point exhibiting the indirect advantage of state aid is the development of the trade of the Orkney and Shetland Islands since the establishment of rapid and frequent steamboat service with the south. It came about in this way. People complained of the inadequacy of the postal arrangements compared with the mainland. Government, under much pressure, gave as a dole, an annual subsidy of some £14,000 or £20,000 to the steamboat company to have a mailboat service four times a week. The result was the rise of a trade many times over—ten times over—the amount of the subsidy. It gave a better market for all produce, both sea and farm, but especially the former. It brought all the requirements of the islanders quicker and cheaper. It brought large numbers of visitors. It broke up the sleeping life of the islands. As a matter of personal observation, the capital sum paid by the government is repaid many times over in the increased wealth of the community. It seems then a well-

established principle that the state can be recouped for economic expenditure in the increased general wealth of the community or district, though that return will not be apparent on the official figures of the undertaking.

It is no less a distinctive function of the state to gather and formalise all information bearing upon industry. The statistical bureau of the state should have at hand a perfect chart of the industry of the country in its every particular and in all its relativity. Not a field of economic activity or aspect of trade or commerce but should be represented in the official statistical synthesis. The slightest change, the slightest decline, the approach of lethargy, should be matters of instantaneous recognition. It is only when a form of industry is dead or seriously perilled that attention is drawn to its condition. That is too late. The first symptoms of decline or check should be a matter of public knowledge. The United States of America and Germany are far before us in this respect. In Germany, when an industry shows signs of exhaustion or stagnation, official attention is drawn to it and experts are dispatched to the spot to rouse and instruct. Whether this country would ever willingly accept this supervision we are not prepared to say. It is not any encroachment upon private effort. It is not state industry. It is the collection and supply of necessary information as the basis of sound voluntary industrial effort, and information which can only be collected on national and adequate lines by means of the state organisation. If industry is the main business of life, the care of that main business should be the main business of the state.

The establishment of a system of industrial museums or collections of all the national products and appliances and of all the rival appliances and products of other countries seems another potential service of the state involving no breach of principle or interference with individual effort. It is astonishing how long it takes and how costly it is to get fresh and useful industrial forms and products before the public. We have no

system for exhibiting at all times and on logical lines all the latest and best examples of the country's industry. Every county and urban council should have a building where all the best forms and latest improvements in the local industry are constantly on view. Similarly, the wants and products of every colony and state should be officially exhibited where they can be reviewed by all. In America they have established these museums with the happiest results. There is no better cultivation of the inventive faculty than visits to these places. Many a happy idea is suggested for one trade by reviewing the practical forms of another. The wild talk of impossible state socialism and industry has excluded from our minds those useful functions of the state that involve no dangerous or disputed principle.

It is not necessary now to point out the duty of the state in supplying a full and technical education to all the youth of the nation. Our knowledge of science and our practical applications of it to industrial wants is increasing in geometrical ratio. There is a profound change over the form of our industrial energy. It is intellect and knowledge that is more and more becoming the form of our labour. We cannot too soon place the most ample opportunities of obtaining the best technical instruction and knowledge within the reach of all and at the disposal of all. We believe in theoretic knowledge being acquired first in the case of employers and experts and the practice afterwards. We believe in the theory being acquired after the practical work, or at all events accompanying it, in the case of workmen.

Nothing is more important, nothing is so important, in respect of the relation of the state to industry than just the efficient discharge of its primary functions of protecting the lives, health and property of the people. When all is said and done that is its greatest form of usefulness to the industrial movement. Industry is non-existent without order and security to life and property. It should be impossible in a well-ordered state to wrong or defraud a single citizen without redress. The state is not so efficient as it should be.

Neither are our laws in that condition which we have a right to expect. Our legal process is terribly slow and costly. Tens of millions of pounds every year are transferred from the possession of those who have sweated and sacrificed by fraudulent means to those who have not. Many millions every year are destroyed through fire, accidentally or wilfully. Personal indebtedness is too easily got rid of. Commercial bankruptcy is a recognised profession. A large proportion of our joint-stock enterprise is criminal fraud. All these call for more efficient state agency and supervision. We would go a step further, however. Many states have entered upon a policy of repudiation. Now a private individual cannot fight a state. Is he then to be robbed? In view of the vast investments being made in other countries the question is worth reconsideration. A state that disavows or is unable to implement its formal undertakings has *ipso facto* ceased to be an effective form of government, has forfeited the right to govern. It should thus fall to the government or governments of the creditors of that state or those states to secure to those defaulting countries rulers with sufficient capacity and honour to discharge the state obligations.

CHAPTER XXV

THE TRANSITION TO THE PSYCHIC

HITHERTO we have been viewing industry from the material side and from the side of action. In the remaining chapters we will be concerned with industry from the side of thought and emotion. Of course in all that part of industry involving the physical and the operative there is much of thought, but in the side we are approaching thought is the dominant factor, in many cases the sole factor; whereas in what we have already treated of the predominance is that of the physical.

It is a feature of modern industry how much of it is of the nature of thought *per se*. Not only in the sense of management and inventiveness, and not only in the sense of moral relations, but in the sense of abstractiveness, of thought itself. It was not always so. There was a time when industry might properly be described as a physical movement, and when man was mainly to be viewed as a mechanical and physical agent. But now man's place in industry is much more that of an observing and thinking being; it is his mind more than his body which is of industrial value.

We propose then in this chapter to correlate the main features of industry through their *special* industrial characteristics to the psychic side. And we can do this in two ways. We can view the movement as a historical evolution and in its main developments as accessions of specific intellectuality; and we can subsequently correlate the present existing movement as parts of a thought synthesis.

We will treat the historical side very briefly, because at the outset we disclaimed the historical view of industry as unsatisfactory and misleading. We said that industry as it is now in the year 1900 is as it never was before, that there are interests and forces at work now the world never knew before, that the fullest development of the phenomena and spirit of industry is the present existential moment. Still we think we may be pardoned for devoting a paragraph to the past in the light of the present.

When man abandoned gathering and hunting for the tilling of the soil, for deliberate labour, was a stupendous revolution; and its deepest significance was its psychic element. Man then ceased to be an animal, and assumed the dignity of manhood; of rational, purposeful and self-sacrificing manhood. When he first began to use tools and use machinery he had mastered nature by the power of thought. When he first stored his produce he had become prescient and forecasting of the future. When he learned to exchange he bound his fellows in the bonds of mutual helpfulness. Man was no longer the rival and enemy of man, but his friend and brother. When he first accumulated he learned to sacrifice the interests of the present for those of a distant and impersonal future. He had laid the foundation of the ultra-industrial movement which we describe as civilisation. Finally, when he began to organise and associate he founded the new interest of the common brotherhood of united humanity.

However, our present specific purpose is limited to the individual and specific contributions of the various divisions and forms of industry, to its psychic side, to the thought side of the movement. Yet even as to that purpose we write this chapter subject to limitation, as we have devoted a lengthy chapter to the "Intellectual Element in Economics." It is the idea of the *transition* to the psychic, to the conception of transition as an active phase of intellectual development ending in a thought synthesis.

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We begin by mentioning the relation of consumption to physiology. It is the idea of the human body organised, functioned and the object of the first services of industry, of man as a nurtured working unit.

Next we mention production as the initial activity of industrial energy. And we observe of it two features, steady exertion, and that exertion directed to a tangible, practical aim ; exertion and practicality are the two ideas involved. After all, the thought that persons assume voluntarily the function of labour is very wonderful. It is only our familiarity with the idea that makes us overlook its importance. It is an attitude of mind, a moral state acquired. So also is the practical objects and methods towards which it is directed. It is a mistake to suppose that man, as a volitional being, directs his thoughts with steady purpose to utilitarian ends. There is nothing so noticeable as the dreaminess and non-utilitarian character of the semi-civilised man. His thoughts are of poetry, oratory, loves, war, and the chase. Now industry has enchained humanity to steady exertion for practically useful and prosaic ends.

Exchange would seem to have established the idea of common services and mutual rights. We could imagine a state of society in which every individual preserved an isolated and selfish independence. But the moment man saw that he could best serve himself by first serving or simultaneously serving his neighbour he merged his individuality in society. But the corollary to mutual service is mutual rights, that a service by one individual established the right to a corresponding benefit from the other side. Exchange abolished the mutual helpfulness of relations and friends with its irregular disproportionateness for the formal, unbenevolent but strictly equitable principle of the *quid pro quo*.

We think the industrial world's consensus of a common standard of value a very important contribution to thought. It is a unifying principle. It

is the search for and the discovery of a final arbiter in the conception of value with all the corresponding relativity therein involved. It added a single governing principle to thought and conduct which has beneficially affected the subjective of the race on other questions outside of industry.

We have written fully upon the inner importance of value and price. They are correlation and proportionateness, but these two principles expressed in the most accurate and most common identity and appreciation of expression, in that of number.

The distribution of the rewards of industry brought to the world the conception of justice. It is not identical in thought, and still less in experience with the conception of mutual rights. There is a certain conception of dependence implicated in the idea of justice, the absolute sense of justice of a superior to those dependent on him, and who might not be in a position to assert a right. There is a great deal more of that sense of justice and the spirit that animates it in industry than people think.

When man began to accumulate he began the practice of self-denial, self-abnegation of the present for the future, of self for others, of the evanescent and temporary for the stable and lasting. To even retain wealth he is under the pressure of constant prudence, that steadier of the conduct of those who wish to retain a made position.

Credit in all its ramifications rests upon assured trust. That is, upon the principle of trust grounded upon intelligible and reasonable grounds. It is faith in the stability of existing society as a general condition, and of the legitimate success of common prudence as a course of conduct in relation to concrete experience.

Insurance has given to thought the laws of probability, as statistics have given us averages and aggregations. So wide the data embraced, so minute and exhaustive the process of the elimination of error and variance, that the conclusions formed from millions of particulars have the validity and accuracy of natural

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laws. In the case of insurance the loss paid is the exception and particular, the premium and the rate are the generalisation formed upon a very wide data and analysis.

These specific contributions to industrial psychic development are of the nature of the isolated, of particulars filling up the form of the general synthesis. Those that we are now going to treat of are forms of thought and stages in the development of thought as thought, that general evolution of the activity and result of thought which we speak of as the growing intellectuality of the age; but, of course, only in so far as they have formed within and as they have affected industry. It may be asked what do you mean by thought as thought, do we not require thought in our every industrial action? Yes, that is true. But we regard thought as thought when it extends and is projected beyond individuals and personal contingencies and limitations; when it is independent of actual concretion in its apprehension and treatment. We regard thought as thought when it can be participated in by several, or rather every competent mind on a common platform, a true objectivity of thought, a common basis of apprehension and judgment. And further, that this thought objectivity should have the sanction of the validity of all true thought in the fact of prescience, certainty of anticipation, that the form in matter and the result in the event will be in accordance with previous thought conception and the laws of nature.

A typical instance is the design or plan. An architect proposes to build a house. He forms a general plan of it in his mind. He transfers his thought to paper. He prepares his working plans. He draws every feature and detail of his projected undertaking from the foundations to the roof-ridge. Every room and stair, every door and window, every chimney and rafter are laid down on a precise and specific scale from the two points of view of ground plan and elevation. This thought creation and exist-

ence in thought he takes to the municipal authorities, who examine it, understand it as fully as the originator, and pass judgment upon it so far as regards its safety, its health, its legality and its appearance. From these authorities he goes to a third party, the builder, who under the guidance or light of the plans rears in actual stone, lime and timber the exact counterpart or physical realisation of the design laid down.

The designing of steamships is even more wonderful as a thought triumph, because the shipbuilder has to deal with a greater variety of form and forces. The form of the ship, its capacity, its speed, its stability, all the stresses and strains, all the mechanical power involved, the generating of steam, the loss of heat, the furnaces, flues and steam pipes, the living accommodation and ventilation, all these are thought of, are calculated to the most minute fraction, and are laid down in the design to a single bolt and rivet. All that is done in the office. When the plans are sent out to the yard, to other men and other minds, the fabric of the ship is steadily reared in the precise form it was first pictured in the mind of the designer, and as it was exhaustively delineated by the half a dozen pale gentlemen in the designing office. The designs of a ship are drawn out in a London street amid the roar of the cart and 'bus traffic of the City, and they are sent, when completed, 500 miles away in the provinces, and there the ship is built. When the designer goes down to inspect the finished work he says, "Yes, that is my ship as I thought it out months ago. It is as I wanted it to be. I certify it for payment."

Representative money again is a thought transaction. That is, the money, the bullion which it represents, is not there, it has no immediate or direct relation to the "paper," it does not move about with the "paper." The material concretion is subsumed, and the promise to pay is a purely thought phenomena and relation compounded of a specific conception formally stated, trust, and the consciousness of the future verification in the event. No part, or at least a very small part of the

material thought conceived and thought transferred is ever visibly or tangibly present.

Then represented commodities are dealt with and dealt in the same abstractive way. For instance, iron and copper, grain and cotton, etc., are bought and sold on warrants, the commodities represented in which have never been seen or touched by either buyer or seller. So disconnected from materiality are many forms of industry, we have known an individual to speculate largely and successfully in tin who could not distinguish, and never took the trouble to distinguish, tin from lead. Options and anticipation are still further removed from material concretion, and are therefore still more truly thought phenomena in respect that they relate to future contingencies, to material forms not yet in existence, and further because the contingency paid and received upon relates to market price, to rise and fall, to demand and supply, all matters governed by human action and unfulfilled events.

The very form of property in much of industry has assumed this abstractive character. For instance, how vast a generalisation in matter, in action, in organisation and in government is one of our large railways with its capital of 100 million pounds. A person buys a £100 share in this undertaking. He thus possesses one-millionth share or part of that railway, and receives one-millionth part of its profits. It is a real possession of property; but how different from our former conceptions when a man's goods were stored under his own roof and commanded by himself alone, when he saw and handled them himself or his servants every day. And yet this huge undertaking, with its 100 millions of capital, is only a particular in the concept of British railways and in the notion of the railways of the world.

But perhaps accounting may be taken as the best example of thought phenomena, because it is system; if it is a perfect system of accounting, it is a real thought synthesis, complete in itself. It is conceived and wrought by purely mental processes. It is the

result of many minds and many psychic activities, all isolated in action but dependent upon each other, and all finally correlated to a final thought synthesis. In the office of the merchant, in his books or literary records, every property and transaction, every service and event, are duly recorded and finally correlated. From hour to hour and day to day, the thought in the office covers, records, arranges and manages every detail however minute, and wherever in the circle of the earth's surface these phenomena are situated. The head of the firm never casts an eye upon an article, upon a ship or waggon, upon a customer or agent, yet through his books he knows and thinks of everything with a fulness and accuracy unknown and unequalled by those who actually do the work and are in direct contact with the concrete material objects with which his firm deals.

These isolated illustrations lead us up to the final conception, industry itself as thought; of industry conscious, willing and informed; of industry observed, compared, generalised and correlated to itself and to the otherness of industry; of industry as a science and as a thought synthesis. This the final realisation of the conception of industry we treat at length in a later portion of our work.

We have now left the material side of industry, and in the remaining pages view industry from the psychic side, as a spiritual not less than a material creation.

CHAPTER XXVI

THE MORAL ELEMENT IN ECONOMICS

MORALS govern the mutual relations of the members of society. Economics is one of these mutual relationships. There can therefore never have been a time since the dawn of industry that economics have not been affected by morals, their forms and forces, and when industry has not affected morals in return. As a matter of fact, it could be shown that in priority of time the supply of man's necessities must have preceded anything in the nature of what we recognise as morals. But very early in the industrial movement morals must have crept in. Since the time of authentic history, and long before, we find them coexisting and inter-related. They coexist now. For a full understanding of industrialism we propose to see how much of morals enters as an effective force into the operations of industry, the character of the influence, and the reaction of industrial forces upon the moral movement itself.

As this thesis is not a discourse on morals *per se*, and is not interested in formulating or proving any system of morals, we start in this examination without any pronouncement in favour of any particular system or school of morals. We shall therefore confine ourselves to the statement of the simple facts of the case as they affect industrialism. The inferences from these facts we leave to be drawn by moralists themselves.

As a movement in itself, industrialism is at once narrower and wider than morals *per se*. It is wider because it embraces physiological, scientific, æsthetic and logical elements equally with those of morals. And it is narrower, because morals *per se* have a governing relation in all departments of human activity

—in law, politics, militarism, art, science and religion. While all these movements share in the common moral movement, each of them has something unique, a side or development of general morals accentuated or impressed with the *special* characteristic of that particular limitation. Thus we come to speak of moral types, of the military, the scientific, the religious or the industrial type of morals. Each of these calls up to our mind a distinct and easily-recognised type of character. It is of the industrial type we treat here.

We have said industrialism, though a large, is a limited movement—that there is a large margin of otherness to itself to which it is opposed, and with which it is contrasted. Of these forms of limitation, there is one of time, which affects the movement through its units. Man is not born an industrial unit. There are many individuals who never enter the ranks of industry at all. Large numbers leave the ranks in later life. There are none who have not lived outside them at some period of life or another. A child is dependent upon the support of his parents until he is fourteen years of age at least. For four to six years after first entering the ranks of industry, he is partially dependent. He is thus not in a position of perfect industrial efficiency, and therefore of industrial interdependency, until he is at least twenty years of age. When, therefore, we speak of the economic unit, we see he comes to us as a consequence of antecedent conditions outside his own will, and from a previous state of absolute dependency upon his parents and society. Only after the lapse of the first twenty years of his life does he come into view as an effective industrial factor, in the fulness of manhood to exercise his own will, make his own choice and bear his own responsibility.

Viewing industrial man there and then, the world before him, what as an industrial unit is his initial attitude of mind, his crucial relation to his life work? He is a living force. He has to will, to determine the application and direction of that force. Manifestly the

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initial conception is the necessity and duty of exertion, of work. Work is the application of force to the realisation of the industrial will in a specific direction. The primal fact in man's economic experience is work, and the primal moral duty implicated in it is the duty of working. The amount of work will depend upon the intensity of the will; but the moral duty, which exists independently of the degree of that intensity, is simply work. We take this to be the fundamental moral principle in industrialism. It meets you at the very initial stage of industrial effort. Political economy is the science of the production, distribution and accumulation of wealth. Before you can distribute or accumulate, you must first produce. The essential of production is work, exertion, industry. Work devoted to ends in themselves useful or beneficial to society, is a moral act. Being a moral act, it is an obligatory duty. Being an obligatory duty, it benefits morally the individual that discharges that duty, as well as the society of which he forms a part. Work makes the individual a better man. Those who do not work fail in their duty to society and themselves. Why do we all despise and denounce laziness and idleness? It is because our moral sense of the fitness and duty of things is offended. We all despise the loafer, high or low. Why? It is not only that those who do not work must be worked for, though that is a perfectly legitimate sentiment, but because we instinctively feel that to be a loafer is to fail in the first duty of life—that it is the mark of a small, a mean and a degraded mind. Mr Bright emphasised the position, the moral side of work, by describing it as the dignity of labour, the conscious and willing discharge of a necessary duty to ourselves, our relatives and the world at large, the conscious fulfilment of a function inherent in perfect manhood. Those who do not work, who do not exert their energies in some function or duty serviceable to humanity, are not only economic failures and social failures, but moral failures as well—failures as individuals and as members of society. It does not follow that all should work industrially. The highest

individual acts of service to industry are generally contributed by those outside the strict industrial plane. But it does follow that those who have no specific work outside industry should find it inside that movement; and further, that industry being of the foundation of human society, the first direction of our thoughts should be to industrial service, and only a specific call to some other sphere would morally justify the individual joining any other. Work, then, is a moral duty.

The next conception that strikes the mind in the production of wealth is the necessity of steady industry, continuity of exertion. Its moral correlat^e is steadfastness, perseverance. Successful industry is not spasmodic effort or feverish activity, but regular, steady application to work. There can be no great production of wealth, and certainly no accumulation of it, without this element of steadfastness and continuity. And is perseverance not a moral quality? It is one of the specific points of difference between savage and civilised man. It is a distinction between different classes in the same race. It is a point of recognised superiority in worth between individuals in the same class and community. Savage races not only dislike toil in the sense of economic effort, but they also lack steadfastness, pertinacity. They follow no pursuit long, whether work, war, or pastime. They begin an enterprise with a rush. They have hardly begun, or at least no sooner do obstacles requiring patience for their removal present themselves, than they abandon it. If an object can be obtained by a rush they realise it. But under the necessity of continuity of effort their purpose relaxes and melts away. Prolonged purpose and effort belong to the higher races, the races that have achieved civilisation. This absence of the capacity for prolonged exertion is most noticeable in the outlying districts of a country where the steady, regular labour required of highly-organised industries is unknown. Their toil is broken, their exertions spasmodic; at least, so they appear to those accustomed to work without a pause for eight or ten hours a day and every day. We may

show the moral nature of perseverance another way. When working men fall out of employment for a lengthened period, they acquire a growing disinclination to accept work, they fall out of the ranks of industry, and become tramps and loafers. When that is the case, it is a matter of general observation that moral deterioration sets in. They become prone to temptation. Their veracity, honesty, sobriety and personal purity all deteriorate. As a trade union official once observed to us, although it was a matter of personal observation before, if a worker once remained on the books of the society for a twelvemonth, he was invariably lost to industry and society. Thus the second initial thought in industry is shown to be of the nature of morals.

Work, steady work, are the initial facts that present themselves to the consciousness of an entrant on industry; the obligatory or binding nature of these facts is the next. In morals it assumes the conception of duty and the sense of obligation. On any hypothesis of morals these are recognised as of the crux of the moral problem. We grant you that a person may work, and work perseveringly, from other motives than duty. But we say that unless he is conscious of the duty of work, of establishing a reciprocal relation of duty toward other men and things, and of other men and things to him, he misses one of the root facts in all industry. Under every system of industrialism, individualistic, collectivist, or state socialist, all assume and require an operative sense of obligation, a consciousness of a duty to be discharged. But coming from the general to the particular, we notice the difference it makes to the individual worker when this sense of duty is present or is absent. When it is absent there is a lack of earnestness and seriousness about his work and service most noticeable. When an individual sets about his work and service, not as a matter of pay only, but as a duty, as the obligatory discharge of a voluntarily assumed function, there is a marked increase in the energy, life and efficiency he throws into the work.

So much we may fairly say about the moral element involved in simple production. Production is a relation between the individual and nature. We advance a step to distribution and interchange of wealth when the relationships are mainly between man and man. In these phases of industry we will find moral elements *specially* characteristic of them.

In distribution, in buying and selling, the primary conception is the existence of other individuals than yourself, other interests than your own. Before the advent of the period of economic efficiency and independency, the limits of conscious individual rights are those of ourselves, *our* families, and *our* friends. We have no thought beyond them. Adjustments are the outcome of sympathy and affection on both sides. The consciousness of a field of wide relationships when the adjustments are between total strangers, where each individual claims the same rights we ourselves aspire to, where in return for one service they demand another equal, and possibly superior, to that rendered, comes to most of us, indeed to all of us, as a disagreeable surprise. We come to see there is a world of correlations born of mutual interest and services from which all considerations of affection and personal prejudices are rigidly excluded and the adjustment of equal rights, of equality of service and sacrifice takes their place. In the world of industry you get nothing for nothing; a brutal, and, at first, a painful truth. The fact that presents itself is you have a useful form of service to offer for which you expect, and feel entitled, to be paid. and that the same forms of service, when rendered by others, are entitled to be paid by you. The mode that the value of your own and other services can be estimated is by the adjustment of price. When a tyro begins to appraise the work of his own hands he is usually unjust. He either, through modesty, cowardice, or inexperience, asks too little, or through vanity, undue selfishness, or greed, demands too much. The first is the most common, much more common than people think. It wears away, however, with surprising speed

under experience, which brings the desired knowledge and infuses courage. Nothing gives so much courage as the consciousness that you are only asserting a right. Anyway, that error is on the safe side; we mean the safe moral side. The second error is more serious and difficult of removal. A large number appraise their services at too high a value. They want too much from other people for their own labours, and want to pay too little to other people for their labours. What is the corrective? Simply that they come to realise that their own state of mind is duplicated on the other side. When greed meets greed an adjustment on the truest lines is the only possibility. No doubt your thoroughly ingrained selfish person is greatly surprised at the other fellow's hard selfishness. But a little experience reveals to him that the other side reciprocates the sentiment. So gradually it dawns upon seller and buyer alike that neither is any better than his neighbour, that both have equal rights, and that a dispassionate or just adjustment of the rights on both sides is the only way out of the *impasse*. Even the most honest of us find in the process of adjustment that we have some bias, less or more, in our own favour, and that the other side, in finding it out for us, have done us a great moral service. Thus the conception of otherness to yourself and interests gets a conscious and practical hold of the mind and conscience, leading to the knowledge and recognition of the rights of other people and the necessity of their appraisal at their true and proper value.

To adjust at proper value, to present for appraisal either services or things, subsumes an accurate and truthful description of the phenomena to be weighed. If all articles that passed from one person to another, or that it was proposed to transfer from one individual to another, could be verified as to their description and particulars, the distributive process would be simplified and perfected. But in all business relations, with every reasonable or even possible check, there must always remain much that depends upon the

truthfulness and honour of the seller or buyer. If there is not this veracity, this truthful description of commodities and transactions, interchange is hampered, difficult or impossible. Some trust in the veracity of the parties to an ordinary business contract is a necessity. It is impossible to strictly verify all the details of a transaction, to examine every article and package, to take down and examine every piece of machinery. Such a process of strict verification would in many cases cost more than the production of the original article. Indeed it would make business impossible. When there is not sufficient veracity to form the groundwork of commercial trust and integrity there can be no trade. On the other hand, among veracious peoples the process of verification is shortened and cheapened; and the cost of verification is a very important element in the cost of distribution. A person who has once deceived a purchaser, or a master, or a servant, never again occupies the same place in their confidence. It makes a moral breach which is a source of distrust and worry. It requires the mind to assume vastly more intellectual vigilance, which might be devoted to worthier objects. It creates a commercial hiatus that is pecuniarily costly and almost impossible to repair. In general it means a cessation of all voluntary business relations. Those that remain are compulsory and conducted under severer supervision, while an increment of price is added as an insurance against fraud and to compensate for unwillingness to deal. Look at the price at which a person of known veracity can buy or sell or borrow at. Why! the reputation of veracity is a fortune and income in itself. It is the same among nations and races. Veracity is the virtue of the higher races, and it is the higher races that are the industrial successes. Now, without affirming that the industry of these races has produced this superior veracity through the constant, all-pervading consciousness and exercise of commercial honour, we can say at least it has been a simultaneous and mutually helpful growth.

What more useful and necessary quality than plain,

prosaic, common honesty—honesty in the acquisition, possession and protection of property. It is a moral quality that is by no means so universal as it should be. Yet the existence of a highly-organised industry is impossible without it. In an earlier stage of civilisation than our own honesty was not recognised or practised as a virtue. In our own day those who have travelled know the loose notions respecting property common among some races and peoples, the petty speculation among all you come in contact with, the constant vigilance over your belongings required if you would have anything left belonging to you. We can see, therefore, that the high place that honesty now occupies in the opinion of the world and its prevalence among the general body of industrialists is a slow as well as beneficial evolution of opinion. It is what we would expect. The world is not only different from what it was before but it is vastly better. Morals, in accentuating the value of this common virtue, assist industry. Nothing reduces the inclination to labour more than the consciousness that the results of your own exertion will be appropriated by other people. The immense and growing extent of property renders honesty more and more necessary. That persons should be found that can be trusted with property to the value of millions under conditions of comparative freedom from supervision is a necessity of modern industrialism. The mere safeguarding and return to their proper owners at the proper time of forms of property is of the nature of an essential and remunerated industrial service. There are millions entrusted with property many times their lifetime's earnings. These are such common responsibilities that little or no merit is assigned to their proper discharge. We think that is unjust and indiscreet. When you think of it, the intrinsic merit of honesty is still there. Its non-recognition is apt to belittle its importance and make persons forget that it is upon the common states of mind the foundational pillars of the industrial movement are laid. Remember, temptation is ever present. A greater test of honesty is that probity

which resists temptation dangerously disguised. None more dangerous than gifts, perquisites, commissions or private speculations with friends, or knowledge by those in independent or quasi-independent positions of trust. Other things being equal, look at the commercial value placed upon honest service. Probity is estimated at a higher money value than intellectual ability or business experience. In general estimation the services of an honest man are more highly valued than an able one. Then what a disaster in industry is exposed dishonesty. We do not refer to legal penalties, though these are grave enough. It is the total wreck of all future commercial hope and prospects. Business ruin. On the other hand, look at the services rendered by industry to morality. Morals are a discipline, and so far as honesty is concerned there is no training equal to ordinary business. Not only do you live in an atmosphere of opportunity and temptation, but it is only in business you realise the slow, arduous nature of its production and accumulation and the full character of the crime of its dishonest appropriation. A long and successful business career is a stringent verification of personal character.

Courage will be universally admitted to be a high moral quality. It is the opinion of many that it is the highest. Certainly no form of virtue receives the tribute of such universal admiration. Without courage a man fears to do all he thinks right and all he thinks wise. Its absence is of the nature of an injurious limitation. It takes courage to resist temptation. But it has higher qualities. It gives the calm, steady observation and clear, unexaggerated view of danger. It is the capacity to take risk and assume responsibility. Now, is courage of service to industry? On the other hand, does the practice of industry superinduce courage?

There is very much courage required in successful and, indeed, in unsuccessful industry. A young man, by diligence and self-denial, has accumulated in five, or ten, or twenty years a small capital. Say he has accumulated one or two thousand pounds. An

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opportunity presents itself of pitting his energy and brains against established rivals, or he thinks—which is the better position—that the time has come when he will make the opportunity and will now pit his individuality against the world. Shall he start? He thinks of the long years of sacrifice to acquire his small capital, of the danger to which it will be exposed, of the many failures of those before him and around him. We have known hundreds who, when the golden moment arrived, had not the courage to stake their all upon a higher success. These remained bondsmen until death. Why? Because they had not the courage to assume the initiative and become independent. They remained servants because they were not worthy to be masters. Think you there is no high courage in industry, commerce and finance? Why, look at the heads and features of the daring captains of industry and you will see courage, purpose and masterfulness marked in their every line. The builders of such structures as the Forth and Tay bridges required courage of a high order. Those that stake their all to open up a new trade in a new country require courage. The financier that handles tens of millions in one deal requires a cool head and courageous heart. We have played at night with a partner whose all was at stake in a commercial issue to be determined the next day. We particularly noticed that his hands neither shook nor hurried in opening the fateful telegram the next forenoon. He won, and for his courage we thought he well deserved it. If those who initiate and carry through these large, problematical and risky transactions were not courageous men, anxiety—anxiety for others far more than themselves—would kill them. Believe us, courage is the root fact in industrialism, and the practice of industry engenders and exercises courage. In the most of industrial operations there is risk to be taken, responsibility to be assumed, and for these courage is required to take it. It is the peoples of high natural courage that are most distinguished in military warfare and aggressive industry. Can any

person say that the industrialism of America, France, Germany and Britain has in the least degree weakened their natural courage? On the contrary, we believe it has preserved it.

Passing from production and distribution we come to accumulation. Accumulation is only possible to supra-exertion beyond the supply of our needs and desires, or to self-denial and abstention from the full use or consumption of what we have produced. In both cases there is a principle of sacrifice on the part of the individual for the sake of some ulterior purpose or position. In the case of supra-exertion the sacrifice is active—the expenditure of more economic energy or the continuance of economic effort for a longer period of time than the immediate requirements of the case demand. In the other case, the expenditure of economic force is not increased in amount or extended in time, but a restraint is put upon consumption, upon our natural desires, upon that inborn selfish spirit that is always urging upon us to lavish all our gifts and labours upon ourselves. These two cases represent different moral types. The one of superabundant energy must have all its wants and desires fully gratified, but after that, perhaps as a consequence of that, will face any additional amount of work for a further useful or desirable object. The other type recognises its own limitations. It has not the abounding energy of the other class. It seeks to secure the same end without the same expenditure of exertion, by denying to themselves some forms of expenditure and restraining their natural inclinations. There is a moral element in both cases. That purposefulness that admits of no weariness, but steadily and unflinchingly labours on until the end in view is achieved, is a high moral force. But so also is that mastery over self and inclinations to be effected and maintained over years of patient purpose. There is a real pleasure in spending, in gratifying our tastes and satisfying our wishes. There is a still stronger temptation to supply ourselves with customary comforts and the style of

living of those in the same social position. Our style of living, which means our expenditure, is an averment before society that our industry has been successful and that we are in such a financial position as can honestly and legitimately afford such an expenditure; we claim to be among the moral and intellectual successes of the world. The one type represents the dynamical side of economics, the other represents the static. It goes without saying that both are necessary. More, that the perfect economic type will be the happy union of both. Still it will be admitted that as you meet them in the world one side or the other shows a predominance. Morally, can we say, in a choice between the types, that the one is more desirable than the other? Viewed physiologically, it is evident there is more expenditure of energy in the dynamical type than in the static. Economically, in the case of aggressive energy, there is an element of doubt as to the ultimate success. Historically, that forcefulness and energy is associated with causes and conditions that do not always accord with the enlightenment and the moral idealism of modern times. As to the static type, it represents control, regulation; it maintains its hold upon what it has effected; it corresponds to accretion in nature—a gathering and fixing into the social synthesis, into the established victory of man over nature. The conscience of mankind recognises that strenuous labour and self-denial are moral virtues. We can see that no field of human activity affords a more continuous and useful exercise of them than industry.

The foregoing are some of the moral elements of industrialism that naturally suggest themselves as primaries under the threefold division of industry under production, distribution and accumulation. There are other elements which naturally present themselves from other points of view. What is the simplest fact, the irreducible minimum concerning the economic unit viewed from the moral standpoint? It is his own individuality, as contrasted with that other-

ness to himself, of which the rest of mankind form the other part. Viewing the individual in this antithetical relation, what is the first moral impression presented to his mind. It is that he has certain interests, rights and duties pertaining and peculiar to himself, and which are not identical with the interests, rights and duties of others, but, on the contrary, are in the nature of the case often opposed to and antagonistic with them. To recognise the interests, rights and duties inherent in and to himself does not preclude his recognition of corresponding rights in others. On the contrary, as a matter of fact, no person can form a just conception of the rights of others who has no conception of rights and interests inherent in and particular to himself. This conception of legitimate personal interest is a primary conception. It is an all-pervading fact in industry. We cannot shut our eyes to the fact that an individual must labour for, must assert his own personal interests first. If he did not he would fail as an economic factor, he would cease even to exist. Also that if this self-regarding principle was not universally recognised, industry as a movement could not exist. It may be said you are starting from the egoistic principle. We reply we cannot shut our eyes to transparent existing facts. But though we start from the egoistic principle we do not end there. We hope to show that industry is as truly altruistic as it is egoistic. Egoism and altruism are coexistences. They are both necessary and not incompatible, as the history of the world shows.

The next elementary moral relation which affects industry is the relation of the individual to the other sex. A knowledge of the necessary relationship between the two sexes in a moral community dawns upon the mind about the period of economic efficiency. The desire to marry and the resolve to provide your partner with the decencies and comforts of life is in general the first, the strongest and most permanent stimulus to individual exertion for ends outside the individual himself. It is a decisive break in strict egoism. As a matter of personal observation we could tell when any

young worker had thoughts of matrimony by his increased activity and closer attention to business.

The next moral influence upon economic man is parental affection, the desire to make adequate provision for his children, the desire to better the position of his family in the world, to give the young ones a good start in life. Of all influences that have contributed to the piled-up wealth of the world it is the love of the parents for their children and the love of the children for their parents, to give the old folk a rest in their old age, that have been the most potent. For one individual that accumulates for the pleasure of accumulating or for some ulterior public motive, there are dozens who have been incited to exertion for the sake of those they loved. If this motivation is not perfected altruism in the philosophical sense, it is the initial stage of it, and is motivation from the otherness side. Individuality, sexual relation and love of children are three facts lying at the very basis of existence, and, as we would expect, are three of the most important moral influences affecting industry.

These are foundational relations, but every moral state or emotion has its influence upon industry. Sometimes very low motives are powerful economic factors. But that is just to say that human society is a great complex of varied motives and interests. For instance, the desire of good living and low pleasures, for the enjoyment of which a large income is required, is a common motive to exertion.

As an example of motivation of a favourable kind, we might mention benevolence, kindness. It is an antidote to the necessary egoism of industrialism. It modifies the harshness of strict business relations. It transforms economic war into a movement of competition and adjustment. It is a splendid economic investment. Many a crisis has been postponed or averted as a consequence of former kindly relations. Many a gratuitous service is rendered or suggestion made as the silent return of spontaneous kindness.

Prudence is a moral virtue and industrial necessity.

We do not mean prudence in the egoistic sense. As a matter of fact prudence is not the virtue of selfish people who in their selfishness are not prudent. But we mean prudent in the sense of caution, of careful conduct and discreet speech. The antithesis of rashness and unreflection. Business requires caution in action and reticence in speech; qualities, contradictory as it may seem, generally manifested by unselfish people. Probably the constant thinking of other people's interests as well as their own gives them that just attitude of mind which leads to self-preservation. No business man can afford to rush into action or carry his heart upon his sleeve. Prudent self-restraint is impressed upon him by every day's experience until it becomes a normal attitude of mind.

A universal instinct whose great economic importance is not sufficiently recognised is hope, optimism, that anticipation of a favourable result or ending over and beyond what the strict circumstances of the case would warrant. It is the antithesis of doubt, the antidote of that carking care, of that pessimism which undervalues contingencies and opportunities and seeks to err, as it calls it, always on the safe side. It is the reflex of that reserve of energy over immediate requirements which is the principle and guarantee of constant progress in the physical world, in organic life, and in thought. Given equal conditions for or against a proposal it throws its influence upon the "for" side. It is an active instinct on the side of progress. It takes risk, not in the sense of courage, which is a deliberate choice or facing of danger, but in the glow of hopefulness, which naturally sees the brighter and more desirable view of things. It thus countenances industrial ventures which, without that instinctive hopefulness, would never be attempted. If nothing had been ever ventured but what commended itself to the judgment of cold prudence the world would not be so well to-day. At the same time during the progress of the venture the adventurers are not consumed with doubt and anxiety as to the result. Carking care is a great drain

upon the vitality, and consequently upon the ultimate efficiency of the industrial unit.

All through industrialism runs the principle of subordination, obedience; the voluntary submission to the judgment and guidance of those older or wiser, or bearing more responsibility, or who have rendered higher services to the industrial movement. There is much said nowadays about equality. We do not undervalue it. We would seek for equality of opportunity for all. But we cannot override the facts of existence. We have not all the same ability, the same capacity for work, the same power of self-denial. We cannot control the character and effects of our antecedents. There is no equality in nature. The most potent fact in organic life to which no one can be blind is inequality. Some must guide and direct. That guidance will always in the event revert to the most competent. Obedience is in the personal interest of those who serve. Obedience assists in modifying natural inequality. We can see that no scheme of association or co-operation can supersede this universal law. It is as existent in a co-operative store or factory as in any individual private concern. Obedience is the advantaging of lower intelligence, or more limited experience by receiving the benefit of some of the superior knowledge, experience, or ability of him he serves. How many could be self-supporting without extraneous assistance? How many could even live without the transmitted and original guidance of those older and wiser than themselves? Obedience is an acknowledgment of individual limitations and a voluntary submission to extraneous adjustment, to adjustment from without. Few make successful masters who have not been servants, and have acquired the capacity and instinct of service. Personal obedience to a master begets a habit of obedience, a ready adjustment to the facts of life, to the inexorable logic of events. There is more antagonism to actuality, more resistance to the inevitable than people think. To deliberately shut the

eyes to the truth, to refuse to notice or recognise facts staring us in the face because they do not suit us, do not fall in with our wishes and intentions, is a common and disastrous economic fact.

A necessary mental state preliminary to successful industry is trust, confidence. It is a static moral relation. That is, it is a normal state of mind which it requires exceptional experience to disturb. It is a general attitude of mind not confined to industrial operation. It is a conviction of the permanence of the society and institutions among which you live. Political stability gives confidence to industrial operations, confidence that you will be able to fulfil your obligations, and that the obligations of others will be fulfilled to you, that your property will be neither appropriated nor ruthlessly destroyed. The industrialist must also have faith in the honour and general reliability of those with whom he comes in contact. Much of the industrial success of Britain arises from the sense of security entertained by the people. If it was only the absence of fret, the absence of unrest, this sense of trust, of justifiable trust, would be a distinct economic advantage. The confidence of America and Germany in the stability of their institutions and their countries' power has a great deal to do with their business confidence. Countries without trust in the institutions and officials of their nation never shine commercially. Just as faith in the moral order of the universe gives rest and confidence and power, so trust in the social and industrial environment supplies a necessary setting for the growth and operations of industry.

Competition is a moral force pervading the whole industrial movement; competition between individual and individual, between firm and firm, between class and class, between nation and nation. There is nothing we hear so much talked about as competition. There is nothing so much denounced as the curse of industry, and as the cause of all the misery among the people on the one hand, and nothing so much belauded as an

economic necessity and real guerdon of human progress on the other. We must admit that the competitive principle is one of the great facts and one of the universals in industry as hitherto pursued. We see also that whatever the nature of industrial competition it has existed along with unparalleled progress in the wealth, happiness, taste, morality, religion and intellectuality of the world at large. Nay, more, it is in proportion to the freedom allowed to or effected by the competitive principle that progress has been secured. Competition must, therefore, in itself be a beneficial moral principle, or capable of existing as a correlative with other moral forces competent to counteract any inherent hurtfulness in the competitive principle itself.

That competition is in itself not only a useful but a determining agency in progress we might analogically anticipate from our knowledge of the conditions determining organic development. The doctrine of competition and the survival of the fittest may possibly, nay, probably, not be all the truth, but at least it is a large and effective part of it. It is even more in evidence in human thought and conduct than among organic forms, and it is more accentuated in industrialism than any other department of human activity. The real discoverers of the doctrine of competition and survival were the economists, not the naturalists and physiologists. It was Adam Smith, not Charles Darwin, that first formulated the principle before the world. Competition meets the economist at every turn, as the evidence of wealth is proof of survival. No doubt it is the cause of much individual and isolated inconvenience and suffering, but on the average of the economic movement it is advantageous. It can be shown to be more; to be healthy, effective and necessary. The cases of individual hardship being exceptional attract attention, and being the occasion of suffering evoke sympathy, while the whole competitive movement in its silent progressive adjustments is unnoticed and forgotten. It is no argument against the moral influence of competition to show that it is

sometimes hurtful. A movement can only be judged by its results as a whole. The process of competition means the ultimate substitution of a superior for an inferior service, a superior for an inferior arrangement, a superior for an inferior article. It is the supersession of inferior forms, of proved inadequacy. It lifts the tide-mark of the movement ever higher against the shore. It is an advantage to the superior individual forms, to the nation as a whole and to the race. It is thus a moral agency, a moral principle, as well as an industrial force. The displaced labour suffers, the displaced arrangement is a serious economic loss. But the general result is advantageous. That is the law throughout nature. Nothing is more strikingly true than individual or particular suffering for the general purpose or interest. It is as well to remember that if displaced labour suffers so also does the displaced economic arrangements. Competition is as arduous and fateful to the master, or system, or arrangement, as to the individual worker. Though we hear little about the evils of competition where only capital is concerned, we hear much about it where only labour is concerned. But if it is a hardship to displace inferior labour and arrangements by superior labour and arrangements, surely it is a greater evil, it would be a greater hardship to permit inferior labour and arrangements to displace or to disbar superior labour and arrangements. That is in effect what it means, what antagonism to and interference with natural laws implies. The lower interest must always give way to the higher, the inferior power to the more capable.

This principle of competition is in part conscious and in part unconscious. Where it is conscious there is much power of remedy and readjustment. Where it is unconscious it is beyond knowledge, and therefore beyond voluntary amelioration. It is of the science of economics to reduce and overtake all unknown though determining elements of economic variation.

Competition as a movement and in the mass is beneficial. But there are many instances where com-

petition is in broad apparent antagonism to the public well-being. But in all these cases it will be found that competition has changed its character and position in the moral *schema*. It will be found that competition among rival interests and adjustments has degenerated into war and class hate, that the maintenance of just rights has become the cruel perpetration of injustice and wrong. But these are not of the true principle of competition in its true position in the world's *schema*. They are of the nature of exaggerations and excrecences. Two very common forms of this incompatibility are strikes and the dishonest appropriation of industrial earnings. In the first instance competition as to price has degenerated into social war. It is not difficult to show that a strike, whether successful or not, is an injury to labour or capital, or, in general, to both. But for our present argument we do not need. It is sufficient to say that industrial war is not industrial competition, that the evils of industrial warfare are not to be laid at the door of peaceful and natural industrial competition and adjustment, and of competition in and through adjustment. In a strike both parties differ upon a matter which should be of common knowledge, certain calculation and possible adjustment. On one or both sides of a strike there is culpable ignorance or criminal prejudice. Often it is caused by social jealousy and class hate. Sometimes a strike is fomented by those who have an end to serve in social discontent. The whole attitude of these disputants is immoral. Ignorance of our proper interests is immoral. Prejudice is immoral. Class hate is immoral. A preliminary to successful adjustment is the elimination of non-industrial considerations, and the return to the position that no movement can be ultimately successful which is antagonistic to or inconsistent with the other operative principles of general morals.

In the second case the competition is one in fraud and robbery. It is the fear of many that competition extends to and is as potent in the case of crime and injustice as in that of industry and adjustment. In this

instance the fact and potency of competition is not denied. On the contrary, its very potency makes persons dread its becoming a weapon in the hands of the enemies of honest industry and society. Let us see. The existence of industry depends not on itself alone, but on the constitution of the wider movement (civilisation), of which it forms a part, and that wider movement is held together primarily by what we call morals. Industry is in a peculiar degree, even as a separate movement, inter-penetrated and dependent upon static morals. If competition in dishonest methods became general, industry would cease to exist. That, however, is not exactly the fear. It is partial dishonesty, the success of a small section of the community through immoral methods, that is dreaded. Of course there is the aid of the law to suppress fraud. But the fear is that within the limits of any possible law fraud could still be an industrial success. In such a case we would be in this position, that in a movement depending upon morals for its success an inner movement could exist and economically prosper through immoral methods. One answer is, that no immoral movement in industry can permanently thrive, because in that ability and judgment without which successful industry cannot be conducted a moral element exists. Correct judgment is a matter not only of intellect but morals; to think accurately you must incline rightfully. Dishonesty contains the elements of its own dissolution. The reader will observe we draw a broad distinction between sagacity and intellectuality. We concede that in operations of pure intellect there does not appear anything in the process or results that we cannot attribute to the logical or reasoning faculty pure and simple. Operations of pure reason, however, are in industry comparatively few. What is most generally needed is the exercise of the judgment, an act of judgment upon the accuracy of certain facts, of the completeness or adequacy of certain mental operations, of the balance in favour of certain contingencies, of the rightfulness of rival claims. Now this judging faculty

is something more than a mere intellectual process, and that something more we take to be a moral element, the innate sense of rightfulness, the instinctive affinity for and recognition of the truth when presented. In all walks of life this distinction is made manifest. Our most brilliant pleaders are often great failures as judges. Why? Because to decide rightly is a different thing from reasoning plausibly or even acutely. How many men of brilliant parts are failures in the ordinary business of life, where the logic of events unerringly exposes their lack of sound judgment? Take inventors, as a class men of genius, who profit little, as a rule, by their inventions, which never exactly fulfil all the conditions of the desired success, and which require a touch of final adjustment at the hands of a humbler but more sagacious mind. And that sagacity is generally in the all-round mind. While in ordinary life we seldom see sagacity divorced from morals, we very often notice intellectual brilliancy associated with erratic moral conduct, to describe it in the mildest of terms.

We see persons of moral parts and no great intellectual power achieving success far beyond what we would expect, simply because they had the faculty of always thinking correctly, of always being on the right side. We say, then, not as a matter of theory, but of actual observation, that for sagacity, for accuracy and insight of judgment, a strong moral sense of rightfulness is imperatively required. But even in the exercise of pure intellect we would be inclined to say a person with a strong sense of rightfulness must possess an advantage, because he uniformly exercises his intellect for one purpose, the discovery and presentation of the truth. There is a double alignment in the one case and not in the other. There is the instinct for and inclination toward the truth, as well as the reasoning instrument by which truth is reached. Accuracy, truth, is his habit and attitude of mind not less than his intellectual objective. That gives his mind a set, a penetration that never stops short of the truth or overruns it.

Now you can see why competition ingrained in which is a dishonest or immoral element can never, not only by the constitution of industry but by the very constitution of our being, be a permanent danger to honest methods or a permanent industrial success. The unveracious, the dishonest, the unjust are at a constant disadvantage in the economic struggle. They lack the real sagacity, the true insight. What they gain by unrightful methods, on the one hand, is restored to the society they have robbed by their mistakes of judgment and errors of reasoning. It has been a world's time observation the Nemesis that overtakes dishonest greed or unjust conduct. And the world observes very accurately in these matters. The absent moral element affects the accuracy of their judgment; they make many mistakes, their investments are failures, they betray and rob each other. If the parent escapes all these judgments righteous vengeance descends upon his children. They are born with a predilection to falsehood, dishonesty, vicious conduct and mistaken judgments. In one generation, or at most two, society has restored to it what was temporarily abstracted by fraud. We think, then, we have already shown that in industry there can only be one kind of competition—competition on moral lines and through moral methods. Competition on immoral lines, on no just lines of adjustment, is doomed to failure, such is not of the constitution of things. Immoral competition, if only affecting a limited section of industry, will die out, will be lost in the ever upward movement of healthy industry. If immoral competition has corrupted the industrial movement itself it still perishes, and the movement with it.

We will return again to the synthetic side. Patriotism will be allowed to be a high type of virtue. It is the nearest to altruism, the virtue furthest from egoism starting from the egoistic side. It is a sentiment possible to all classes and every individual in the community. Radical and Tory, Churchman and Dissenter, soldier and scientist, individualist and

socialist, have this tie in common, that these various and discordant sentiments are only expositions of the best practical form their love of country should take. To all other interests and emotions it is an additional tie binding all the community together in an interest transcending all individual and class interests. We have said the state as a political organisation is one of the conditions of industry. But what is the influence of the patriotic spirit, the emotion of patriotism, which is something different and separate from the external organisation, what is its effect upon industry? Its most common form will take the form of personal kindliness, interest and preference to all those of a person's country, and the preference and promotion at all times of his country's interest. March of progress takes the form of subordination of particular to general interest. That is sometimes not so easy as one would think. Who, for instance, could get up an enthusiasm or make a sacrifice for a school-board, or the linen trade, or the Metropolitan Railway, or the Royal College of Surgeons? Yet these are all general interests superior to those of any particular individual in the country. Now, in our common country we all feel a personal interest, which marks a vital difference between the patriotic and all other general interests. Though our country is further removed from us, is more of an abstraction than those particular general interests we have alluded to, they have not the same attraction for us, they have not the same influence upon us as our patriotism has. When these more general and class interests come into strong antagonism, when consideration of individual interest and prudence are forgotten in the agony of strife or fear, as, for instance, during a strike, a financial crisis, or a great dearth, then the common love of country comes in, and in that higher interest the smaller interests are absorbed, stilled, and justly adjusted. We have known a strike closed on patriotic grounds when all other considerations had failed. We remember when the Stock Exchange refused to quote until a panic was allayed,

though there were millions in the deal ; and that upon patriotic grounds alone. We think that during this South African War the wages difficulties that have arisen have been discussed with a breadth and moderation such as never before in our time characterised such disputes. And we attribute that fact to the patriotic sentiments aroused among the mass of the people through the war. In a nation animated by true patriotic spirit a call for consideration and concession in the country's interest will never be lightly put aside. Where there is a strong love of country there is a common interest in all the other interests of the country, there is an atmosphere of friendly suggestion and mutual helpfulness of the utmost value. As an example, look at the suggestiveness of the press letters, or the kindly disinterested suggestions of the club smoke-room. Thus, in the event of a crisis or a danger, all ranks and classes close up to meet it and avert it, not, as in countries where the spirit of patriotism is dead, to sectionally or individually profit by it.

We shall make our point in another way. There is no greater strain upon the spirit and resources of a people than war—war with a neighbouring and rival country. In the fight for hearth and home and for national existence every power of mind, every instinct and intellectuality, are at the utmost strain. War is indeed the discipline of nations. Now, it is a matter of indisputable history that every nation that has come through a conflict victorious and true to itself to the inmost core has, in the immediately succeeding years, advanced in industrial progress by leaps and bounds. Following upon the prolonged wars resulting from the French Revolution this country entered upon a period of unexampled political and industrial activity and progress. The United States of America was not a commercial rival to this country until after the stupendous struggle and patriotic sacrifices involved in the Civil War. Germany, before her great and decisive struggle with France, was commercially unknown and unheard of, was never even taken account of, in the

markets and finance of the world. From the close of that war she has advanced in wealth and industrial enterprise with a rapidity proportional to her courage and sacrifices. Japan in the five years succeeding her successful war with China has quadrupled the volume of her trade. These are a succession of consistent facts which cannot be adventitious, but are the result of the operations of great natural laws. This conception is universally true through all human society. If a person has been in extreme peril, either personally or through his interests, is it not the fact that you feel braced and strengthened, that you receive an access of power you are conscious you never before experienced? Thus with the patriotic spirit. In ordinary times it is a strong, attractive tie binding the particulars of society into a coherent synthesis, and exercising a steady, though unnoticed, influence upon industrial progress. In times of danger and loss it is a great bulwark and recuperative agency and accession of industrial strength.

Industry is a synthesis of ordered relations, of many forms of force. It is of the nature of a complex, not a series of great natural laws. Industrial success is only possible when the individual adapts himself to the reign of that law which runs unfailingly throughout the movement. And in proportion to the extent and accuracy of the adjustment is the measure of the industrial success. This consciousness of limitation is thus always impressed upon the mind of all those engaged in the ordinary business of life. The sense that there is a right thing to be done, in the right way and at the right time and in the right place, is always being impressed upon you. This necessity of rightful action and of appropriateness of time and place is borne in upon the mind of the industrialist more constantly and continuously and for a larger part of his life than any other class of the community. A person engaged in active business for eight or ten hours a day is, during all that period, under the conscious necessity of voluntarily adapting himself to inflexible conditions

outside himself. Is it any wonder we so often speak of law-abiding citizens? The value of time, the importance of order and sequence, of position and convenience, of the relative importance of incidents and movements, all combine to form a phase of character and habit which we describe as the business habit, the industrial type of morals. The business man gets through a larger amount of work in less time, with more ease to himself, and with less fret and friction than other individuals. It is a real restraint upon wild and wandering and incoherent thought, emotions and actions. Large numbers, unable to bear the burden, abandon industry and regular occupation altogether. The ranks of crime, of the tramps and loafers, of the adventurers and prospectors, ay, of literature, are mainly fed by those of lawless instincts, reversions to the pre-industrial type, to whom any form of restriction, even for a good object, and when self-imposed, is hateful. Is this business habit a moral state? That it is a state psychological or moral is evident, because of its permanence and distinctive recognition. That it is moral is proved by its bringing a closer union with a wider range of natural law, as well as by the fact of its utility. It is also proved by its introduction into other fields of activity. We all recognise that the business habit is a great accession of power when introduced into the practice of science, law, militarism and even religion. Under modern conditions of life it is recognised as an indispensable condition of success. If this business habit of mind was only possible, instead of having its highest manifestation in industry, while it might be economically useful, it could not be pronounced of the nature of morals, but in the universality of its application and usefulness it passes into the domain of morals.

Industrialism is a movement. It is made up of an immense number of individuals with an infinity of interests and activities. Millions enter the movement every day, millions every day leave it. It is a constant flux of phenomena. Yet, despite all changes of

individuals, activities, conditions and interests the general movement remains stable, progressive and easily and characteristically differentiated from all other world movements. It is a living synthesis; and yet the synthesis contains always within itself rival and disruptive interests and antagonisms. Indeed, it would seem at first sight that the elements of repulsion are more in evidence than the forces of attraction. Personal interest and rivalry are powerful disintegrating forces. It might be that the synthetic elements—the binding forces of industrialism—exist outside the movement itself, and are to be found in our common nature, instincts and intellectuality. If that were so industrialism would not be a movement of perfect independence, free in the self-determination of its own collective will, its own specific purposes, its own realisation through effective adaptation of means to ends. That is a consequence not lightly to be assumed. It would be the negation of industrialism as a self-contained movement. Industrialism might be an art, it could be no science. When we look back on history we find commerce, agriculture and industry binding forces to the current world movement of their time. But to that movement these forms of industry occupied a subsidiary position. Besides, it could not be said that the agriculture, commerce and industry of former times had either the importance or homogeneity of the industrialism of modern times. Much of industry in former times assumed a social aspect, in which relationship, connection and friendship formed a uniting tie. But these forms of unity could not be said to be of the industrial movement *per se*. Besides, in modern industrialism the field of operations is so wide that personal elements are already a small and diminishing quantity. Yet we would say never before were the ties uniting universal industry so strong and enduring. It is clear, therefore, we must look for some operative principles within the movement itself to explain adequately the gravitative tendencies which bind the movement together. We think the main synthetic

forces in industrialism are a common purpose, mutual interests and benefit and well-proved trust and respect.

In all phases of society a common object, pursuit or purpose is a binding relation. A religious communion is a powerful social force, primarily because the members have a common purpose. Philanthropic and benevolent societies or organisations are a power in the community beyond their mere numbers, greatly because of the unity of their objective. Political parties are a power in the state, because their members concentrate their energies for the realisation of a specific programme. So with industry. The thoughts of millions are directed in a specific direction. Think of the intellectual forces directed upon industrial operations, thinking the same thoughts, running along the same grooves, coloured or tinged by the same emotions. A common purpose does affect, intensifies, the impressions of all the units in a movement. It produces an atmosphere of sympathy following upon intellectual activity, which becomes a thought continuum, not the less influential because it is difficult to distinguish.

To sell you must have a buyer. He must be solvent and must have the means to purchase. The wealthier buyers are the more they can purchase. No poor person or inadequately capitalised producer can do justice to the commodity he puts into the market. Thus the idea of the prosperity of the individual being bound up with the prosperity of the community soon dawns upon the average mind. Experience following upon a bad harvest or other economic disaster brings sharply before the mind the fact that the common interest dominates the individual interest. Thus each transaction is followed by a sense of mutual satisfaction. The buyer is pleased that he has got what he wanted. It is a source of benefit and pleasure the use of the article bought. The seller is also pleased as he taps the reward of his labour in the pence in his pocket. The buyer is grateful to the seller for selling. The seller is grateful to the buyer for purchasing. To injure your customer or your producer is to injure yourself.

You have a natural interest in the prosperity of all with whom you have business relations.

Even to have business relations with other individuals superinduces a certain personal interest in them which is more and over and above what you have with the great mass of unknown humanity. In the case of prolonged business relations conducted with probity on both sides a sense of trust, a living confidence in the honour of your correspondent, is bound to spring up. But in a business life you have had thousands of correspondents all equally trustworthy. Your trust becomes impersonal. It is transferred to the system, to the movement itself. You know that the tests so stringently applied to yourself are applied to all others. It becomes a trust not only of a movement, but of a movement formed on a certain line of experience, and resulting in a certain type of character with which you have sympathy and confidence. If to these we add the body of common knowledge, not strictly industrial but in contact with it, the similarity of views, the identity of the intellectual standpoint, we can see that industrialism has a strong synthetic side to set against those inner antagonisms inherent in the movement, and that within its own borders it has a preponderance of attractive forces.

We have assumed hitherto that moral phenomena present a coherent, logical and consistent development. We have been considering them from the egoistic, experiential and practical side. The development of morals must have its basis in the individual, in his everyday experience, in the facts of life common to every individual as such. Strong and sometimes coarse ties are required to bind human society together. In the nature of the case the basis of all the primary moral states are those bound up with our physical nature and our material interests. It is upon these that a later and higher morality is superimposed. It is because economics relates primarily to the supply of man's necessities and has been coeval with his appearance on earth, that we find the foundational in morals the consequent or coincident of the foundational in economics. The

fact of moral states and moral relations is antecedent to their conscious recognition. The practice of morals in many cases exists without the conception of any moral purpose. We would say, then, that from the experience side moral conception could at the most be no more than coincident, most probably subsequent, to the practice of morals or to the existence of moral states or relations. Very soon, however, an incipient altruism was bound to appear. The moment two individuals saw they had a common interest which dominated their separate individual interests, and without the conservation of which their individual interests would be non-existent, that moment the act of egoism was turned towards altruism. Industry herself took the final step towards the introduction of duality in morals. It was through wealth that leisure and culture came, and leisure and culture brought forth altruism and gave birth to intuitionism. In intuitionism theory precedes practice. The world of thought, of conception, far surpasses and outstrips realisation. It is anticipatory of experience. But though altruism and egoism start from different sides of the moral order they merge or are in process of merging. The development and elevation of experience meets practical and realised altruism. As we have said, it was in the generosity and sacrifices of industry that altruism and intuitionism were conceived. What return have they made to industry for the service? It would indeed be a bad day for industrialism if the prophetic anticipations and forecasts of intuitionism were for ever divorced from the staid and prosaic business of everyday life. Might we also say it would be a bad day for idealism when it shot itself clear of mundane affairs to float a nebulous satellite in distant space?

It will be considered that no phase of thought can render greater service to another than to create or initiate it. Yet such, we apprehend, is the service rendered by altruism and intuitionism to industrialism as a science and as a perfect movement. Adam Smith was the founder of the science of industry. He was

not the only or indeed the first worker in the field, but he was the first to conceive the movement in all its fulness. His whole position and attitude of mind, not only in economics but in morals and philosophy, is altruistic. The conspicuous altruistic sentiment in the political economy of Adam Smith and his school are the identifying the interests of the individual and particulars with the general well-being, and the establishing the doctrine of free trade. The first will be generally conceded as of the nature of true altruistic service. The second, the doctrine of free trade, was merely the transcending the boundary of national jealousy and selfishness, and thus also entering altruism. For long nationalism was the nearest altruistic conception of the practical mind. The doctrine of free trade made the first break in that selfish barrier that let in the flood of light and sentiment destined to sweep the narrowness of nationalism all away. We say then that the creation of the science of industry was the work of altruists and intuitionists, and that the two primary conceptions of that science of industry are of the nature and purposes of altruism.

Since then there have been many particular though lesser services. It was the altruistic sentiments of humanity that abolished the trade in slaves, in human beings. It is difficult for us now to realise the difficulties in the way of abolishing slavery. It had been the immemorial practice of the world, long before the dawn of civilisation man had held his brother as a chattel. Slavery was a vast vested interest. Millions of money were sunk in it. To abolish this interest required all the moral enthusiasm of humanity and years of devoted and unselfish labour of many master minds. It was done, but it never could have been done but through the moral enthusiasm of the altruistic ideal.

It is the altruistic instinct that condemns the sale of drugs (opium), firearms, and ardent spirits to lower or uncivilised races, and stamps with moral opprobrium those who participate in the traffic.

Altruism was the main agent affecting public opinion in favour of labour organisations. These have the moral sanction of humanity despite many appearances of fallacious argumentations against the advantages of their existence.

A clear case of the influence of altruism on industrialism is the conceding by this country of all the rights and privileges enjoyed by British subjects, not only to all her own colonists and dependencies, but to the subjects of all other countries. Wherever the British flag flies, a fair field and no favour is all that is asked for the Briton himself, and every privilege enjoyed by a Briton is extended to foreigners. No other country in the world does the same. There is not a country in the world where British products are not placed at a disadvantage compared with native industries. And still Britain thrives. If there were any evidence needed of the unseen connection and advantages of altruistic sentiment and the successful practice of industry it would be this. It shows the deep interdependence between the two great movements. We grant you this altruistic policy is pursued now not only as a moral duty but as an economic policy. It is industrially advantageous as well as morally satisfying. But at first we did not anticipate industrial advantage. We gave this freedom, we extended these privileges as a moral duty contemplating industrial loss and financial sacrifice. Thus our altruistic instincts were a truer guide to our material interests than the cold calculations of selfish minds. We can see that the advantages of this altruistic course is permeating the public opinion of the world, and the well-being of humanity is now the economic policy of all enlightened states, but nothing can ever deprive this country of the honour of having practised the principle before its industrial advantages were perceived.

On the other hand and at the same time industry returns to altruism much useful and indeed indispensable service in the cause of humanity. The moral ideal of our time does not stop at the triumph of nationality,

but aims at the elevation of the whole human race. Altruism is not only the determination of a principle, the highest good of the all, but it is a necessary policy which is not complete until every individual of the race has reached such a stage of moral development and education as to be governed in his conduct by altruistic considerations. We have great problems awaiting us in the far East and in Africa. How are we going to raise the 1000 millions of the lower civilisations to a higher plane? It is here where the influence of the higher industry comes in. Experience shows us that we cannot graft suddenly and directly a higher civilisation, a truer culture, upon peoples much below the standard of the desiderated graft. Moral attainment is a slow development through successive stages. All these stages are essential. They are like the scaffolding of a building, not one plank of which can be omitted. The omission of a single stage of experience leaves a hiatus in the development which makes all above it lopsided and insecure. Before then you have a universal and worthy altruism you must have a cosmopolitanism, a spread and union of humbler ties and interests. Industrialism begins at the bottom with our commonest interests; with the food, the clothing, the little luxuries, the better pay, the little savings of the people. It is a union of selfish and material interests. It teaches the first lesson in altruism, the benefit arising from the mere existence of the race and of intercourse with your fellows, that the great mass of the world outside of you is for you a beneficent fact, and to you a benevolent institution. It is intercourse, mutual interests, which break down the barriers of national prejudice and enable the masses to realise the inherent unity and identity of humanity, which make people study, understand and respect each other. Our lower civilisation must be gradually raised by the steps and processes we have ourselves passed through in our pilgrimage upward and onwards. Our missionaries see that no true progress in morals and religion takes place among these peoples until they have effected an improvement

in the form of their material conditions. They have to break with the past, break their cast-iron fetters and acquire mobility and a desire for new truth. And they can do that easier in industry than any other form of activity. They have to acquire habits of steady work, industrial skill, a higher standard of comfort and a growth in knowledge. In doing that they are preparing the way for a truer intellectuality, a better morality and a higher religious life.

We speak of the ideal in morals. When we think of the ideal in thought itself, in conception or speculation, we mean the projection of thought usually through imagination toward higher truth, truth which though convinced of is yet beyond logical verification, and still more distant from realisation. Now this ideal must exist in some form in industry, as industry is of the nature of a world's movement, participating in all that is of the nature of foundational in thought and action. The ideal in industry, however, will appear in some practical, everyday form. We cannot express it better than in the idea of quality, of goodness and of superior or supra-goodness. We will find this idea of quality, of super-excellence, runs through all that is recognised as of the best in industry. Beginning with labour, a workman, under the influence of the aspiration of the most perfect work, throws more exertion and will, actually expends more work upon his object than cold calculation demands. Have you ever noticed a workman wielding the hammer or any other tool? When, to the eye of the spectator, the job is finished, and in actual fact is finished, he goes over it again or gives it one or two extra taps as though loath to leave it. He aims to effect an object. He does not stop short. To be sure he has secured that object he goes beyond it. That is the operative, ideal instinct, the desire to give the highest work, the nearest perfection possible. A tailor in making your garment can do one of three things. He may stitch it just to get it off his hands and secure his pay. Or he may stitch it as to fulfil all the stated obligations of his contract. Or he may sew it *con amore*

and as though it were to last for ever; the parts not seen as well, as neatly and firmly, as the parts that are seen. The latter is the exposition in action of the ideal in industry. In all manufacture and construction this desire of good work, of turning out a structure somewhat better than the imperative wants or obligations of the case demand, is a living present. Or take your average tradesman who deals in quality, the idea of the very best is ever present in his mind. When he is paid by his client without any acknowledgment of his commercial honour and ideal, he sighs and says to himself, "You little know the trouble I take to maintain the standard of my goods and firm—money does not represent it." And it is true, but the satisfaction comes in that he did his duty. Now this idea of quality, of ever striving to produce and sell the very best, is of the very constitution of progressive and successful industry. No firm, no nation will ever attain to industrial eminence and permanence that has not this underlying conception. As well expect a nation to advance that has no high moral ideal, no aspirations after truth. The very best of quality, the very best of value, the very best of services are the true industrial ideal and the true secret of industrial success.

Industrialism is the root fact of civilised life, that from it, or amid it, or around it, all that we know of knowledge and practise as morality had their beginnings. We have shown that egoism as the inseparable concomitant of industry preserved for long an unbroken development. But that logical and practical sequence industry herself broke. Industry, through her accumulated wealth, was able to set apart and support learned and leisured classes to whom the increase of knowledge and the problems of life became their personal pursuits and the form of their duty to the community at large. As conception always transcends and outpaces realisation, the gap separating the ideal from the practical in thought and action necessitated a return of altruism upon itself, to forms of morals limited by experience, of which industry is one. But

the sanction and incitement remained altruistic or intuitional. Egoism and altruism thus became ostensibly two separate movements operating simultaneously from two different sanctions as well as different sides of morals. The one starts from the unit and his interests and in successive stages reaches the higher universals. The other starts from the ideal or intuitional in morals, and through the process of realisation overlaps and merges in the opposing principle. We have thus three great thought movements—egoism, altruism and industrialism. Where do they merge? They merge in realisation. But in realisation their mergence takes a thousand forms. We want a principle of common unity, the bridge in thought to give us a logical transition from the one movement to the other. We find it in utility; that is the principle characteristic of all three and the logical means we require.

We have got then morality and industry united in the common quality of utility. But here a difficulty comes in; there are moral states subconscious, or rather unawakened to consciousness. It is a mental state which is that of mere tendency or unconscious direction, and is no more a true moral state than is the blind instincts of the lower animals. For true morality implies choice, free determination; and there can be no such voluntary determination where there is no consciousness. In the same way in industry there is much of it habit, imitation, common opinion, which, not being conscious and informed, is not of the nature of that free determination which is the characteristic of the human mind at its highest and best. That blind moral instinct and that unconscious habit of industry requires something to make it free, responsible and determinative. We require to give it consciousness, knowledge of itself, of its hopes, duties, influences and responsibilities. It is knowledge that makes us free; and it is the knowledge of all that is in industry and dependent upon it that makes industrialism free. To recover to true morals this unconscious element now hidden in industry we have only to make it conscious,

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to reveal it to itself, to show all that is immanent in it; and then all that is sordid and selfish in industry will be shed and cast off for ever. That is the highest service the science of industry renders to industrialists. As though that could be inherently and irrevocably sordid or mean which is the natural and constant occupation, which is the outlet of the thoughts and energies of two-thirds of the human race—of 1400 millions of human beings. Why, industrialism is the fact upon which the existence of the human race depends, and through which alone art, science, politics, culture and religion are possible. If industrialism has not always risen to its responsibilities it is because moralists have not taught it its true nature and belittled its services.

It may be said surely this is a very small thing, the mere giving of consciousness and articulation to an unconscious movement. It is everything. It transforms the slave of circumstance to the free and responsible agent. It revolutionises the motivation. The industrial unit is no longer an irresponsible worker for his own ends, but he is a responsible sharer in the movements and advancement of the world. It transforms the whole subjective. Among the poets who have drawn to themselves the hearts of humanity none are dearer than those who have revealed the beauty inherent in common things. And when these beauties have been drawn into the light they have remained the world's possession for all time. And the true moralist has the poet's insight into the beauties and idealisms of common life. It is in the coarsest of clays the most brilliant diamonds are often found. We want to shed not only light but reveal the beauty, dignity and grandeur hidden in the ordinary life and occupations of men. We want to remove the conception that industry in itself is sordid and mean, that it is dishonouring to toil until the sweat breaks upon your brow, that in other ranks, and especially in what they call the higher walks of life, there is a higher life to live, a greater courage needed, a deeper sense of responsibility

to the world developed, or a career of greater honour opened up. Industry has suffered in the past from these mistaken opinions. Many have been shut out from a useful and honourable career, useful not only to themselves but to industry, by the prejudices of society ; and they have lived to play the sharp and cheat among their *confrères*, or have preyed upon the honest earnings and sacrifices of those they affected to despise.

That is the personal effect of the dawn of consciousness within the industrial movement, its effect upon the subjective of the industrialist. But there is another effect born of the realisation of the moral importance of the movement itself. It is of the nature of a true moral movement that it inspires a spirit of unselfish devotion and sacrifice among its devotees, and seeks for them a field for the satisfaction of their altruistic instincts. Many now leave the ranks and associations of industry at a comparatively early period of life, that they may devote the latter part of their life to the service of their country and humanity. They do so under the impression that there is no opportunity within the ranks of industry to practise disinterested service. Now, if that was so, if it was unfailingly necessary to leave the ranks of industry to be of altruistic service, we would say be it so. Though it would appear to be of the higher wisdom and service to create the wanting altruistic conditions. Those that leave industry for the satisfaction of a higher form of service generally think it necessary to turn to politics or religion as that most useful form. They leave a movement and form of experience they know, and which is of the very foundation of things, at a late period of life for the miserable squabbles of politics and the petty quibbles of theology. Is it any wonder they often find them Dead Sea fruit? If they wish to practise unrewarded devotion they can do it inside as well as outside the industrial movement. We see many movements advantageous to the people, movements that would help enterprise and accumulation at the very lowest rungs of the industrial ladder, to which the counsel and the aid of a small part of

capital would be of the essence of essential service. The friends would give spontaneously of their business experience to start operations of industry that only need that knowledge to start them on the road to success, to put them in a favourable position for the inevitable competition of the world. That is, we think a useful and satisfying form of philanthropy is to be found in wise business counsel to struggling movements among those low down in the social scale—*e.g.*, working-class housing, small saving and rural banks, and co-operative industries, etc.

There is another altruistic service. There is much of industry that requires supervision and suggestion from the outside. There are always new evils, new forms of service, new difficulties and dangers, which are soonest recognised and best remedied by those outside the immediate turmoil of business. There is also legislation to suggest and policy to guard and guide. To all these a person satisfied as to his own personal wants can lend the aid of his own life's experience. Further, the science of industry is as yet only in its infancy. It is little more than a century old. We can see that we need an immense amount of additional data, more definite and precise formulation, fuller opinion before we can say that the principles and foundations of the science are securely laid. To that end the leisure, co-operation and voluntary and disinterested labours of those who have lived the industrial life, not looked upon it from the outside, is essential. It should therefore be of the nature of a duty for everyone who has the leisure to join a statistical or economic society to record his experience. That is unless he has a special and particular call in another direction.

But there is still another moral view of the position. Should a trained, experienced and successful industrialist ever leave the ranks and connections of industry? We say not without adequate cause shown. He says he has enough wealth and perhaps to spare. But that answer shows that individual has only viewed industry from the egoistic, not the altruistic standpoint. Has the world

enough, enough of industrial enterprise, knowledge, organisation, and especially capital? We say the world has not enough or nearly enough of capital. We need at least a thousand times the present capital of the world to make the temple of the world, to make the real house of God all that it might be and all that it can be. The true altruistic industrial ideal is a world without an acre, ay, without a foot, of surface unreclaimed and rendering to humanity sustenance and service. We are no admirers of large individual fortunes *per se*. We would rather see many small fortunes than a few large ones. But we can see under^h present conditions large fortunes honourably acquired are very useful. The ideal state would appear to be the universality of fortunes with larger, and sometimes large fortunes, the result and reward of special economic service, running through them. But we do know that we require vastly more capital in the world's high interest, and that this essential want can be assisted by those remaining in industry who have no special call of duty to go out. Witness the result of this custom in America.

CHAPTER XXVII

RELIGION AND ECONOMICS

It may seem somewhat out of place in a thesis upon industrialism to introduce the matter of religion. The scientific character of our subject is lost in the paucity and narrowness of its treatment. You cannot understand political economy unless it is exhibited in all its relations. Besides, to view the world of thought, action and things you need a standpoint from which to view them, and no point of view is so steady and sure as our deepest and widest everyday experience.

The connection of religion with economics is not direct, but comes through morals. Whatever the character of religion, it must have a moral purpose and sanction. In general terms, it may be said to be a supra-moral influence, an additional accentuation, a further sanction than morals in themselves possess. As the existence of industry, not less than its efficiency, depends on the morals of those engaged in it and of the community in which it is constituted and carried on, any strengthening or fostering influence upon morality is thereby an increase of industrial opportunity and efficiency. If proof were needed of the underlying harmony existing between religion and industry, it would be found in the fact that the most religious nations are economically the most prosperous. The most energetic and prosperous industrial communities are North America, Germany, Holland and Great Britain, and we think it will be admitted that these countries are those in which the religious spirit and religious influence have the most powerful operative effect upon the mass of the people. If it be said that

France is a case pointing to an opposite conclusion, her wealth being great and her evangelicalism a matter of dispute, we reply that the peasantry of France are deeply religious according to the forms of their faith. France's wealth, however, mainly arises from the extreme economy and spirit of privation among the people, and the Roman Church in its fasts and discipline of the appetites fosters successfully the privative principle.

The mention of the last circumstance leads us to point out that of direct benefits conferred by religion on industry, one of the most important is this training of self-control. The abstention from certain foods, meats and drinks, from certain luxuries and pleasures, for a day in the week, or for a period of the year, is a most useful check upon the aggressive habits of self-indulgence. The institution of a whole day of rest is, economically, an immense advantage. No shortening of the working hours *per diem*, if the working days are to be seven, can compensate for a complete day of cessation from labour. The entire day's rest and leisure facilitates the perfect co-ordination of all the functions of the body. But it also enables the mind to recover its tone, its perspective. You see things again in their true proportion. Difficulties are solved or solve themselves. Omissions are recalled to memory, and the worker starts on Monday morning more truly correlated to his work than when he lay down to sleep, tired and confused, on Saturday night.

But religion is another form of experience; it is an appeal to other instincts and other interests than those more immediately operative in industry. It thus corrects the narrowness of our special pursuits, the one idealness appertaining to too exclusive attention to one form of interest and activity. The perfect industrial unit is not the individual who thinks of nothing else and knows of nothing but his selfish pecuniary interests. On the contrary, the most effective worker is the real universal particular having an effective sympathy with every form of human interest and activity. The

distance separating the religious thought and the religious spirit from the material interests of industry does not weaken the useful influence of the one upon the other. On the contrary, this detachment is of the nature of the service, for it necessitates a complete temporary withdrawal of the thoughts and interests of the individual to a different and higher plane, in which the egoism inherent in industrialism is for the time transcended.

There are many failures and many victories in the industrial war. Many weary in the prolonged campaign, others lag behind in the march. Others fall in with misfortune or meet with disaster through no fault of their own. It is the fortune of war. All, equally deserving, do not return to be crowned with laurel. To all these religion extends sympathy and consolation. The wrongs and misfortunes of this life will be rectified and compensated in the next. The idea that failure to reach success is due to ourselves and a true sequence to the actualities of our experience never occurs to the failures themselves. To them the world has been hard, blind, unappreciative and unjust. It would be cruel to refuse to them the consolation religion affords.

So much at least can be said of the favourable influences religion exercises on economics. But there is an unfavourable side which truth requires us to state.

In some countries the *religiouse* increase the number of public holy, fasting and festival days until they become a serious incubus upon the industry of the people. For instance, in South America, a few years ago, 150 days in the year were regarded as specially religious or holy, on each of which it was regarded as religiously meritorious to abstain from secular pursuits. That was a terrible drain upon the resources of the community. Besides, it fostered lazy, indolent and broken habits among the people.

Then some forms of religions have and do accumulate vast wealth. Some, again, have a law that forbids the alienation or the parting with any money or

property or object that has once passed into the possession of the Church. These vast and ever accumulating hoards of wealth affect industrialism in two unfavourable ways. In the first place, it discourages industry among the people. The children seeing the savings of the parents disappearing in the maw of the Church, either through cajolery, open threats, or artful intrigues, naturally think they are safer enjoying their income as they make it than accumulating wealth for strangers to possess, or would rather labour for a daily sufficiency only. In the second place, the transfer to a non-industrial and non-producing class of immense masses of capital locks up that which could be more freely and more profitably employed by the laity. Granted that the clergy have to invest their appropriated wealth, it will be found that the securities they prefer to invest in are those that prudent laymen require a share of. The clergy monopolise all the safe investments in a country, leaving to the laity all the risk and loss. Through their spiritual influence, used for sordid purposes, the clergy possess an immense advantage in purchase and in avoiding losses. Their power and influence in the municipality and state is often used to promote undertakings likely to enhance the financial interests of the Church. So deep is the pressure of this economic grievance, so disastrous the enormous accumulation of the Church, that in Roman Catholic countries it has been found necessary to put a restraint upon the accumulation of real estate in the country lest in a short time the whole land of the community would pass into the hands of the priesthood. In other countries, in Italy, France and Spain, it has been found necessary, in the national economic interest, to make the priesthood disgorge.

A more subtle injury is done to industry when the clergy belittle the importance and dignity of the ordinary business of life; or when they describe poverty as a necessary, desirable or meritorious moral or religious state; or when they seek to impose the conditions of an ignorant age, or a simple, primitive and

pastoral life, or of narrow and exceptional circumstances upon the wider knowledge and interests and altered conditions of modern civilisation; or most dangerous of all, when the clergy preach doctrines which are economically unsound and fatal to all industry or individual progress upon narrow interpretations of sacred books or the special practices of specially situated individuals. We believe industry to be not only the absolute duty but the highest duty of the great mass of mankind. Industry does not degrade humanity, but elevates and ennobles it. Poverty is the crime and disgrace. There is no danger so great as the identification of religion with mistaken opinions in political economy. Work is not an inborn instinct; it is an acquired capacity. Honesty is a moral growth fostered by industry. Rapacity, and the desire to rob others of the fruits of their labours, is the historic and natural state from which we have slowly delivered ourselves. Economic truth is not a set of mathematical or arithmetical truths self-evident and patent to the meanest understanding. On the contrary, the truths of political economy have been slowly elaborated by centuries of experience and discussion. It thus takes little to turn the scale against even the fundamentals of industry. It would not be difficult under the disguise of religion to make the masses lose their slowly-acquired instincts of work, to make our natural rapacity to re-appear and to champion movements of appropriation and spoliation. We say the identification of religion with any of these economic errors would lead to a serious check upon industrial progress, and indeed upon the progress of civilisation itself. Let no one say such dangers are unknown in our own age. When did a priesthood ever hesitate to peril national existence, or the interests of civilisation, if such circumstances stood between them and a sacerdotal triumph? But look at the facts. We know that socialism of the most dangerous kind is not only tolerated but fostered by the Roman Church in her ecclesiastical interests. The cast-iron, merciless tyranny of the state socialist is consonant

with the tyrannical rule of the priest. We know that the robbery and spoliation of Irish landlords is openly advocated by the Irish clergy as a part of the policy of their religious propaganda. Anarchy in Italy was openly preached by the Roman priesthood as a means to wreck Italian unity and revenge themselves on the Italian monarchy. The priesthood foster anarchy also in France, nihilism in Russia and red socialism in Germany to obtain a triumph over and command of the policy of these states. In view of these facts the identification of priestly designs with economic fallacy is not an impossible danger, and is one of the most formidable conceivable.

CHAPTER XXVIII

REST AND RECREATION

THE value of religion lies in its distance from the experience and spirit of industrialism. It is a rest from the cares of daily life, but a rest in the activity of a higher life, of a more idealistic atmosphere, an atmosphere unvulgarised by the touch of prosaic vulgarity. No doubt in the same sense abstract science is a rest, as it is free from the worries and the personal elements of concretion. Many business minds have in the pursuit of science found much-needed relief. But such forms of relief from the ordinary cares of life are only possible to the will and capacity of superior minds. The great mass of those engaged in business are not superior, but ordinary, average people. The rest they require is to be found in easier and more pleasurable rather than in higher and more arduous conditions. Thus, at the other pole of thought from religion and science, we find a strong desire or necessity of rest exhibited in the form of recreation, amusement, pastime.

Of course the great rest from exhausting labour is repose, sleep. Nothing can supply or take its place. The characteristic of sleep is the temporary suspension of consciousness, of the exercise of volition, thought and emotion. All sense of effort and resistance gone, the waste in the normal conditions of the body is repaired, organ and function re-co-ordinated. That form of rest which we share with all other organic forms, is the best, easiest and most natural. We would only mention in connection with it, that few recognise how much reparative or recuperative power is involved in a few minutes' extra rest, say fifteen minutes or half an hour.

It seems reasonable to think that a turn of extra exertion through the day should be compensated by a few minutes' earlier retiral or later rising. We say, "Just try this," and you will recognise its advantage. The reason seems to be, that the bodies of persons of regular habits acquire a static or normal power and period of recuperation, that the ordinary day's work is repaired by the ordinary night's rest. But after an extra hard day's work the system has not the time during the customary hours of sleep to complete the customary reparative process. A remnant of waste is unreplaced, an organ not duly prepared for the resumption of its proper function. You rise tired, or not properly slept as it is called. It is really toxin not removed from the system. You labour all that day with a minute point of weakness in you, the germ of possible disease, certainly of decay, which thirty minutes' extra rest would have effectually removed.

But there is another form of rest—active rest, rest in a change of function, and therefore of organ. In ordinary business there is much of sameness, a constant repetition. This continuous strain upon the same set of cerebral cells and the same bodily tissues wearies them and wears them. But if we take up another interest or form of activity which requires a corresponding change in the powers of mind and body employed, we afford rest and relief to those other bodily and mental organs we had formerly exercised. That process is what we call recreation.

As a rule, where we have the determining choice of change, people take a form of relaxation different from or opposite to, or complementary to, the form of their recognised duties. Thus, if a person is engaged in sedentary mental occupation he will seek relief in out-of-door physical exercises. He will take to golf, or cricket, or fishing, or some form of outdoor sport. If, on the other hand, he is engaged in arduous physical labour he will sit at home and enjoy his reading and music, or go as a spectator to some place of public amusement where, without exertion, he can enjoy him-

self. It is an old-time proverb, "All work and no play makes Jack a dull boy." We are beginning to recognise the right, if not the advantage, of appropriate recreation for all classes. Still it is generally regarded as a pandering to popular weakness and a clear economic waste. Now in this thesis, though matters of right do not fall to us, a question involving economic waste does. Let us see, then, how much, if any, economic waste is involved in legitimate recreation.

We set aside domestic and social intercourse and pleasure, which are of the nature of rights and duties and do not partake of artificial relations. We also set aside poetry, music, the arts and the drama as being of the nature of higher culture, and therefore to be defended upon considerations other than those we have presently in view. We are thus left with the general body of the recreations to which the great mass of actively-engaged industry turns for relief from business toils and cares. These viewed widely generally take the form of reading serial or light literature, or viewing spectacles, or engaging in games of skill, or practising games of active and aggressive strength.

As to light reading, it exercises the imagination, a very useful thing in view of the dull, prosaic, colourless course of ordinary business. It stimulates taste. It broadens our view of human experience.

Spectacular display, such as football matches, the circus and the music-hall, exhibit the poetry of action, the possibilities of muscular effort; they open to the view of the spectator all that knowledge, skill and training can do for action. It a matter of surprise to intellectual knowledge and culture what a working man can see to attract him on a football field. They do not go to bet. The large proportion of them have to stand in cold and discomfort during the game. What is it, then, that every week draws spectators numbering from ten thousand to eighty and sometimes a hundred thousand to the football fields? It is just the same instinct that never tires of Shakespeare, or Milton, or the speculation of

the higher physics, chemistry and astronomy. It is the craving after the ideal. It is the sense of admiration for perfection in action and energy. Only a worker knowing all that is involved in skilful work, in perfectly applied physical energy, can perceive and apprehend all the closer efforts of the game, the perfect command of the individual over his bodily efforts; what a tremendous effort and strain was involved in that victory of just one inch, in that instantaneous judgment and act of one-twentieth of a second. A worker sees in a football match all that is possible to work or action. But there is another reason for attending a spectacle. You are yourself passive. You have to form no judgment, to take no initiative, you impose on yourself no responsibility. Your will is passive, and in that passivity, while your attention is agreeably attracted and your senses gratified, your will is rested, the strain of responsibility is temporarily relieved. You forget yourself in the spectacle.

There can be no doubt as to the advantage of recreation taking the forms of games of skill. Draughts, chess, billiards, are all physical and mathematical training of a high order. To those that engage in them they present a new experience, or rather a different side of experience. The inexorable certainty of natural law is apt to be forgotten by those engaged in uncertain and psychic business relations. The physical and mathematical adjusts their thoughts and thought organ to a true alignment with natural law.

Those that seek their recreation in active out-door sport, such as golf, cricket, fishing, shooting and boating, are really training themselves in the highest qualities necessary for the successful pursuit of business. To begin with, in out-door sports you are laying in a stock of health, muscle and energy of the first importance. A vigorous mind in a vigorous body is the ideal. But do not let us suppose that the vigorous body has nothing to do with the vigorous mind. Nothing weakens a man's power of good work more than a weak, ailing or diseased body. In health your work stands easy

toward you. In moments of initiative, responsibility and promptitude, a vigorous body is a great aid to the mind. It makes you more forceful. You are conscious of more power. Now, though in science and philosophy and other purely intellectual and speculative fields of activity a fair mind in a very rickety body has often secured great and brilliant results in the rough, all-round battle of industrial life, a healthy physical structure is an immense advantage. But the advantages of outdoor sport do not stop at better health. These games develop skill and will power as well. You train yourself in accurate observation. Your eye becomes sure. Your acts become steady and certain yet swift. Your judgment becomes prompt. You learn to rely on your own judgment and not on other people's. You become prescient and aggressive. You acquire the power of initiative. One of the great evils of modern industry is the large and growing size of industrial firms and corporations and trusts. That means the centering of responsibility and initiative in few hands. The opportunities of exercising initiative are every day being lessened so far as the numbers of individuals exercising it are concerned. The result is that in these large concerns when employees live up to command and responsibility they are hard set and nerveless. They lack courage, adaptation and energy. We must, therefore, as a rule, look to wholesome recreation outside of business as a training in those qualities of responsibility, prompt judgment and initiative which are the real determining factors in industrial success. And in this training of useful business qualities outside of business, the mistakes made in learning and the penalties of failure carry with them no economic cost.

Broadly, recreation relieves business worry, widens experience, broadens the grounds of judgment, gives another point of view, puts the mind in more direct alignment with natural law, strengthens the courage and capacity for responsibility and develops the will. We may say then of recreation that all of it is pleasurable and desirable; some of it is useful as well as pleasurable.

A great deal of it is economically remunerative and a further amount absolutely indispensable to modern industry or to the conditions attached to modern industry. Under these circumstances it will take a very large ostensible cost to make it appear that the legitimate recreations of industry involve economic waste. But in point of fact, when we examine the question of ostensible cost it is either nil or comparatively trifling. There is practically no ostensible cost in reading, in games of skill and in many forms of out-door sport indulged in by the masses. A matter of threepence or sixpence is the price of an afternoon's amusement for many other forms. They are wise business men and municipal authorities who encourage and assist the reasonable recreation of the people.

We have used all through the qualifying term "legitimate." What do we mean by "legitimate" recreation? Recreation is legitimate when it is subsidiary to business, when it is regarded as the ally and auxiliary of business. Recreation is illegitimate when it is regarded as the main business of life, when individuals and nations regard amusement as the main purpose of life. It is also illegitimate when it is pursued to the extent of fatigue, or when it occupies the industrialist's thoughts during business hours. We must never forget that the main business of life is industry. The conception that the main business of life is or ever can be amusement is a fatal error, and is at the bottom of much of the agitation for shorter hours than economic laws can justify and is the cause of much social discontent.

CHAPTER XXIX

ÆSTHETICS AND ECONOMICS

"MAN does not live by bread alone but by every word that proceedeth out of the mouth of God." That was the observation of a very ancient sage, and it is seen to be as true now as it was then. The field of thought and action outside mere bread-winning is now vastly larger and more varied than it was during the time of the prophetic writer. And no single word is wider written on the page of nature than beauty; beauty of colour, of form, of sound, of touch, of taste, and of fragrance. The fact of beauty is as evident in the world around us as is any of the other great facts of existence, orderly sequence, adaptation, permanence, change and permanence in change. Beauty meets us at every turn, in the most common and humble circumstances as well as in the greatest and grandest. We all perceive the beauties of an autumn sunset, they are so striking as to arrest the attention of the most careless eye. We admire the extraordinary beauty of our more gorgeously plumaged birds, our most brilliant fishes and our finer flowers. Not so many note the humbler beauties by the wayside. The forms of the wild grasses, flowers, the ferns, the buttercups and daisies, the bluebells and heaths. All these when looked at are miracles of form and colour, not less than of structure and function. Indeed, nearly all organic life and even specific inorganic form has at least one side appealing to the æsthetic sense of man.

As we would anticipate in so wide a fact, the æsthetic in nature subserves a function. It is pleasurable and grateful to the senses, attractive and magnetic to those

endowed with the æsthetic sense in proportion to the extent of their endowment. In virtue of these qualities it has been a potent element in the evolution and modification of organic life, particularly in the case of man. We are conscious when we are in the presence of beauty, whether in nature or art, that we are in the presence of a powerful force which profoundly affects our mind and action, which attracts, fascinates and draws us even against our will and inclination. Further, there seems an intimate correlation between forms of highest efficiency, combinations of harmonious effective adjustment, and what we recognise as beauty. For instance, the racehorse, the antelope, birds of strong flight, fishes, are all forms of high efficiency, and all are structurally beautiful to look at. This truth holds equally good in man's productions. Take naval architecture for instance. The form of ship or boat, especially under the water-line, most pleasing to the eye, that is, having the most perfect lines and proportions, is always the best sailer. We have tested this opinion often. Engines of the best type and highest efficiency always please the eye better than those clumsily and loosely put together or of less efficiency. A well-made, comfortable and well-fitting suit of clothes looks better than a badly-fitted and uncomfortable suit. We could run this parallel or correlation through thousands of instances. Bridges, buildings, and all other structures as they approach the lines of highest economy and efficiency assume harmonious proportions pleasing to the eye. We are therefore in this position, either that the æsthetic sense comes in time unconsciously to colour or shape the form of man's perfected productions, or that these productions in their highest and most useful forms develop an æsthetic side pleasing to our æsthetic instincts. Thus we can see that those with keen æsthetic insight and sympathy will always have a touch of sentiment in a direction which leads to the most effective forms and the most efficient forces.

Beauty may be classed as of two kinds: the beauty of nature, of natural objects. The beauty there is

inherent in the object itself. It only requires a per-
cipient and responsive mind to see and appreciate it.
Man can neither make it, mar it, nor alter it. The other
kind of beauty comes at the hands of man himself.
He either reproduces or imitates the beauty he sees in
the material world around, or he produces creations of
his imagination or fancy, potential not actual exist-
ences, which are grateful and pleasing to the æsthetic
sense of himself and fellows. In the first instance
man is responsive solely. In creative art he is active,
executive, purposeful, as well as responsive and
sympathetic.

No beauty is so great and grand as that of nature
herself. It is now an important branch of industry to
search for and bring within the arena of observation
beautiful natural objects, such as diamonds, rare flowers
and beautiful birds, insects and animals. But usually
the beautiful in nature cannot be detached from its
surroundings, and to be seen and enjoyed must be
visited on the spot. Thus have arisen the great trans-
port arrangements by road, rail and ship to convey the
curious or appreciative to the most beautiful scenes in
the world. Hundreds of thousands of the general
public, as well as of artists and connoisseurs, are
conveyed every year to the lakes, sea lochs and
mountains of our own country; to the Alps, the
Andes and the Himalayas; to regions where
vegetation revels in every variety of form and
colour. The classes hungering for personal contact
with the beautiful and grand in nature are increasing
in number and devotion every year. Through modern
invention and enterprise millions are now enabled to
drink nature's intoxicating æsthetic draught at the
fountainhead, and at a tithe of the cost of such
pleasures sixty years ago; and, however we may
explain it, they are satisfied they have received an
adequate return for their expenditure. Let us not
despise the cheap excursion or conducted tour of a
few days. Those who have thus enjoyed direct contact
with nature return to their homes with a clearer, truer

vision, and for the first time perhaps recognise the squalor and sordidness of their normal surroundings. That is the first step toward a higher standard of life.

All man's æsthetic creations have an industrial side. They must come in touch with industrialism at some point or another. If it was only that through industry alone can the means be found for educating and sustaining the artist. Artistic objects or effects require labour and skill to produce them. They have a market value. Since the dawn of civilisation finely-wrought metals, sculptures, mosaics, rich fabrics, delicate perfumes, are productions of artistic skill eagerly sought for and bearing a high value. They are sought for because they gratify our æsthetic instincts. They are appreciated in proportion to their intensiveness, that is, to the intensity of the influence of the production upon our senses, to the percipient insight manifested, to the width, variety and harmony displayed in the creation; to the pertinacity, minuteness and skill shown in the execution. These circumstances constitute their intrinsic value. But there are other extrinsic circumstances which give art objects an adventitious value. For instance, the reputation of the artist, circumstances connected with the former ownership or history of the object, the fashion of the time or the harmony of the object with the personal taste or circumstances of the buyer, all help to enhance the rarity, accentuate the individuality and raise the value of the production.

Another connection is the aid lent by industry to art in the supply of the raw materials for artistic productions and the invention and supply of superior instrumentation. We have all the materials used by the ancients and many more besides. We have many new colours and shades, new metals or amalgams, new fabrics both in make and materials. Modern chemistry fixes colours permanently which formerly were fleeting. Glass and pottery have a purity and tints surpassing those of former days. The instruments used in art are vastly lighter, handier and more varied. Some of the new forms of instrumentation are quite a revolution in

artistic methods. Take the camera for instance, resulting in the representation of one side of objects with an accuracy that no pen, pencil or brush wielded by manual skill can equal. These representations are produced in the thousandth part of the time a skilled artist would take under former conditions. In instantaneous photography actual impressions of fleeting and changing views are obtained which were quite impossible before. Sky-scapes, sea-scapes, rapidly-moving objects or rapid actions are all fixed with mathematical precision. With the aid of photography we have the instantaneous fact reproduced instead of a distant memory of a momentary impression.

In modern times industrialism has altogether changed the relationship of the world to art. Formerly all artistic objects were the products of superior individual taste and rare skill. They required a considerable and in some cases a long time for their execution. They were very costly if they possessed in any degree the impress of an artistic mind. They were the privilege and enjoyment of a select few. Now by mechanical means the roller and plate, the mould and the die, much art can be duplicated or copied indefinitely. These reproductions may not have all the merits of the originals, though in some cases they have, but at all events they are colourable imitations. And look at the price. In many cases for a penny as compared with a hundred guineas beautiful and gratifying works of art are placed in the hands of the people. A picture or a sketch in a nobleman's gallery formerly only seen and enjoyed by himself and a few friends can now be reproduced through photos, prints, magazines and journals, and placed at the sight and enjoyment of millions. Why, in the gratuitous advertisements of commodities and in the very wrappers of goods there are given to the multitude artistic treasures which only sixty years ago would have been considered an adornment of the walls of a by no means humble dwelling. Though we have spoken of pictorial art, this process of duplication and cheapening applies equally to other branches of art.

For instance, artistic furniture, glass, metal ornaments have all become a part of this æsthetic democratic movement.

There are other forms of duplication besides those mentioned. For instance, the theatre or hall or concert-room is really a process of duplication. These places are built on convenient sites and in appropriate forms. An eminent singer, instrumentalist or performer is engaged or a popular company hired. The remuneration is high because the artistic skill is eminent. Suppose we say £100 per night. These services are worth that sum, as is proved by the constant demand for them at that figure. The artist addresses himself to an auditory of 2000 people. Each of these will have paid, on an average, say 2s. Yet for 2s. each of the audience will enjoy to the full—to all he himself is capable of enjoying—services costing £100. Suppose one of the auditory paid the artist £100 for a private repetition of the performance, he could hear no more, see no more enjoy no more, appreciate no more than when he paid his humble florin at the entrance door. That is an example of the advantages of applying business principles to the enjoyment of art.

Another service rendered by industry to art is it gives to art the impress and guidance of the practical mind. The æsthetic instinct is in itself impractical. Imagination allied to the beautiful is too apt to live in a world of its own divorced from mundane associations. This isolation is unwholesome. The true principle of art is its influence upon everyday life, its absorption into the everyday work of the world. But even in the realisation of the highest æsthetic conceptions, if there is no business instinct, no sense of industry and orderliness, there will be little given to the world of what the world has need. There is a practical side to effective art. Without it the highest æsthetic dreams die as the mere gratification of selfish egoism.

We can see, then, that there is a large and growing expenditure on the part of society for æsthetic ends, that the gratification of our æsthetic sense employs

more energy, skill and capital than ever before, that this æsthetic thirst is a growing movement every year reaching further down in the social scale, and spreading in influence and effectiveness among the classes already æsthetically percipient. We should say that just now among the higher industrial peoples one-half of their energy is expended on objects we could conceivably do without. Of that supra-necessity a large part is devoted to the gratification of our æsthetic instincts. The question we now ask, is this expenditure of energy useful and remunerative, or is it needless and exhaustive waste? •

This question is important in many ways. It is evident there is a limit to ordinary and necessary expenditure. No person can eat more than a specific quantity of food. Nor can he wear more clothing than contributes to his comfort, warmth and protection. Neither can he receive more than a specific amount of shelter from the elements. It is evident, therefore, our growing wealth must either be moderated or transformed into useful forms of fixed capital, or must be expended in the gratification of our personal enjoyments and æsthetic tastes. Here we only deal with the latter. It is what we recognise as the elevation of the standard of living. This higher standard is practically the spread of the æsthetic sense. More agreeable foods, more pleasant drinks, neater furniture, more ornamentation of our houses, more elegant and tasteful dress among the mass of the people, and a higher æsthetic sense and ideal among the educated and wealthier classes. Clearly, then, it would be a matter of the gravest social concern if all æsthetic gratification was economic waste, if this ugly fly was always to stink our pot of ointment.

Further, we have seen that the beautiful in nature and the æsthetic sense in man and animals are as self-evident facts in nature as any of the other universally recognised laws, and in particular of the fact and necessity of industry itself. In the event then of the gratification of our æsthetic instincts being economic waste, we would be in this position, that two broad facts in

nature, æstheticism and industrialism, two facts irrevocably implanted in the very constitution of being, were antagonistic to each other. Mark, æsthetics and industry are no mere matters of voluntary human effort or appreciation. They are of the very constitution of things binding on us whether we will or not. We have to reconcile them, as there must be somewhere a process of reconciliation.

As we have said, æsthetics are not only a fact, but they discharge a function in nature. Beauty is an attractive power. That to us, at all events, seems its primary function. And in industry this primary form of service is the one that first attracts notice. Industry not only supplies attractive things but it uses this attractive quality to draw attention to its commodities and operations, and also to give them a form or covering pleasing to the eye.

An educated æsthetic sense quickens the observation of discordant or unharmonious adjustments. Flaws, blemishes, misfits, all appeal more quickly and more clearly to the senses.

The practical gratification of æsthetic instincts, the exercise of artistic skill perfects the co-ordinations of perceptive sense and physical organ. It produces deftness of touch, a delicacy of taste, ear and eye which is of the nature of work governed by a higher intellectuality. The superior deftness, readiness and adaptability in operative industry of the workman with artistic leanings and practice is a most noticeable everyday experience.

The æsthetic is the idealism of sense perception. It is the mental state superimposed upon sense perception. There is more immediacy between an æsthetic synthesis and perception *per se* than between perception and any other form of mental synthesis. When a person gazes upon a brilliant sunset there are few, if any, mental processes between that perception and his recognition and enjoyment of it. The mental process lies at the very base and beginning of thought. All that can be said of the æsthetic is that it is keener perception, truer

insight, greater perfection in the simplest and most foundational of mental activities. But it is these primary mental states that are operative and governing in the common physical work of the world. There is not much reason but much observation and insight required in actual work. The æsthetic, then, is the highest form of this primary perceptive faculty. You see deeper, you see truer under the influence of æsthetic powers than you do without. For instance, civilised races can hear, can recognise sounds on a high scale which are not only unrecognised but unheard and non-existent to certain lower races. Again, in war and chase savage races can observe and see facts, traces and inferences which are unperceived and non-existent to civilised peoples which have in the course of centuries of peace lost the faculties formerly active under different social conditions. If it be said, how do you prove that the æsthetic sense is the highest form of sense perception? We say the mind intuitively recognises it as such. Just as we recognise a higher truth in logic and mathematics, or a higher and purer ideal in morals, so we have the sanction of consciousness that our finer æsthetic perceptions are those of a higher nature. Might we also add in illustration of the services of æsthetics to industry that as æsthetics contain an ideal element, and require imagination for their adequate apprehension, they bestow upon perception all that wealth of conception and ideal experience which imagination bestows upon other forms of mental activity. An æsthetic mind, in its conception of the potential in perception, transcends the rigidity and narrowness of actual experience. It is thus more resourceful, more ready and adaptable than those more prosaic minds which have not the gift of poetry in sense, motion and action.

Human development depends not only upon the perfect alignment and accord of thought, action and actuality, but also upon the number and breadth of the foundational principles embraced in the synthesis. The more numerous the forces embraced in any particular

movement the more it partakes of that cosmic character which is the sure, and therefore the perfect, form of all energy. Industry is only one movement among many. At the same time it receives and contributes support to other world movements, to more of the world's movements than any other single movement does. Now, if in industrialism there should develop an æsthetic side, and if that side should not be directly remunerative, yet if it developed or strengthened an instinct racially useful and cosmically true, then the economic cost of that æsthetic gratification would be recouped to humanity in a field outside of strict industrialism. That is to say, that the race would draw upon industry to pay the cost of the equally necessary æstheticism. We are therefore not afraid of the ostensible economic cost of that æsthetic element in industry and out of it which has been so rapidly developing in modern times. With this limitation, however, that the æsthetic movement preserves its due proportions to the other world movements. Everything in nature is not beautiful. The æsthetic, though a necessary principle or it would not exist, is not a universal form of characterisation. If to this accessory and subsidiary we attach the importance and bestow the energy of true essentials, the true proportions of nature's synthesis will be disturbed and decay and disintegration ensue.

Again, if a movement limited in its own characterisation extends a helping hand to a sister movement outside itself, it does not suffer thereby, but, on the contrary, is itself strengthened and made more powerful and effective. In society the most forceful member is the nearest approach to the true universal particular. In industrialism it is equally true that the all-round man is the most efficient industrialist. So in a movement, the more elements of power, the more forms of activity and interest embraced in it, the greater will be its momentum, its initial force. Art adds to the swing of industrialism.

These observations are called forth to meet the

contingency now with us of a large expenditure of wealth and energy toward the gratification of our æsthetic instincts. But we would not have it be thought the cultivation and gratification of artistic tastes necessarily require any great expenditure of wealth, we had almost said of any wealth at all. In the family and household and their immediate surroundings the elements are ready to hand to awaken and give voice and form to all that is most æsthetically true in nature and man. In the wider national life, if the true instinctive, artistic feeling is there, much can be done, to beautify our life and surroundings without any or any great cost. In the vast majority of cases it costs no more to make an agreeable object than a disagreeable or non-agreeable one. What we understand by the adornment of civilisation is the trend or habitual attitude of mind which gives an unconscious leaning to what is graceful, beautiful and pleasing. The national æsthetic is not exhibited on these specific and exceptional creations of beauty which dot here and there our cities, or in those rare manifestations of exceptional artistic genius which draw the admiration of the world, but in the general and unobtrusive elevation of the whole handiwork of the people, high and low. Hitherto the idea of art is as something marked off from the general life, something specific and special, something involving sacrifice and cost. What is needed is the true conception that when we are making the useful, we should, at the same time, make it as tasteful and artistic as the circumstances will permit. That is not apparently much, but the little it is would brighten and transform industry like the glow of a sunbeam thrown through a wood or projected upon the dark surface of the water.

CHAPTER XXX

KNOWLEDGE AND INDUSTRY

THE great facts of the present day are the great increase in the population of the world, the growth of industry and the accumulation of knowledge. These great facts are synchronous, do they also imply interdependence? As to the correlation subsisting between increase of population and the corresponding development of production there can be no doubt. It is no mere synchronism, but a real correlation. Population could not increase unless preceded or accompanied by a corresponding increase in the supply of food, clothing, heating, shelter, and other wants of life. Is there a similar correspondence between the growth of knowledge and the development of industry? Again we grant the synchronism. The growth of knowledge *has* accompanied the extension of industry. Neither will it be disputed that for the accumulation of the vast stores of modern knowledge, the result of the leisure, devotion and investigations of scientific men, such exclusive attention to their respective pursuits was only possible through the labours and sacrifices of previous or contemporaneous successful industry. Still, that is not the point of the present chapter. Is knowledge a condition or an advantage in the pursuit of industry? Is there such a thing as industrial knowledge *per se*, knowledge distinctive of industry, and recognisable as such? If so, what is its function and marks?

Here we have to remind our readers of a very common mistake. In modern times, when we speak of knowledge we mean by that term articulate and formal

knowledge, knowledge that has assumed a literary embodiment. Formal knowledge, however, is not the whole of knowledge. We believe it to be a very small part of it. We shall show further on what a vast unrecognised field of human experience stands unformalised, unwritten, almost unrecognised. Knowledge is hidden under every form of experience, in every action, in all work, transient or permanent, as well as in speeches, writings, drawings and books. What real knowledge was obtained by the brewing industry of bacteriology, of sterilisation and the laws of biology centuries before the scientific labours and discoveries of Pasteur.

This question is important, because to hear and read the discussions concerning technical education one would think there was no knowledge, and is no knowledge, in industry but such as has been given to the world in recent years in book form. All industrial operations have ever been conducted through knowledge, and are only successful, indeed possible, so far as such knowledge extends.

Industry must have been cœval with the race. Man must have subsisted ever since he came into existence. Since the dawn of industry is the beginning of knowledge. And that condition of knowledge existed thousands, possibly hundreds of thousands, of years before conscious, articulated and formal knowledge was even possible. All other forms of knowledge are subsequent to, suggested by, or the consequence of our industrial knowledge, our everyday experience. That industry has been the last to be recognised by the formal knowledge she herself gave birth to, arose not from the absence of potential conditions of formulisation, or the absence of advantage, and, indeed, necessity for such a process, but because, in the opinion of the past, the real business of life was despised and true knowledge was supposed to consist in the arts of the rhetoricians, the dreams of the poet, the small intrigues of the politician, the denunciations of the religious, and the efforts of the philosopher

to read the infinite past and solve the eternal future. Such prosaic subjects as the material well-being of humanity never cost articulate humanity a thought.

But there is another reason in explanation running through the ages, the difference between the practical and the expository mind. It is a most noticeable fact the inarticulateness, ay, even the unconsciousness, associated with strong practical instincts and sense. The practical man does not learn readily from books, as neither is he at all ready in giving a reason for the faith or rather practice within him. It is not surliness or unwillingness, but simply his whole being is wrapped up in things and processes and actions; he has not developed the expository and intellectually associative and sympathetic side. On the other hand, the lack of practical insight and adaptiveness is no less apparent on the literary and expositive side. A technical writer versed in all the laws of matter and mind cannot drive a nail into his own trunk, or even, for that matter, pack in his own clothes. The difference is important, in view of industrial education. There are large masses of the population that cannot learn intelligently and readily from knowledge presented solely in literary form.

The position, then, would seem to be this, that industry is only possible in and through knowledge, that the success of industry depends on the extent and applicability of that knowledge. On the other hand, that industrial knowledge lies at the very heart of all true general knowledge is also transparent. Our so-called technical knowledge is a recognition of what has always been in industry. It is an articulate return of knowledge upon itself, to its original well-spring. Beyond the sphere of recognised articulate knowledge there is a field of inarticulated and unformalised knowledge. How vast we can only guess at. We know the limits of the recognised. The unknown we can only vaguely guess at in its silence. Though, even as regards industry, we will show subsequently this unknown element is larger than the public think. Our ignorance

of our commonest experience is a great deal deeper than we dream of.

We make, then, a distinction between formalised knowledge and what is called everyday experience. But we recognise that experience formalised and articulate and placed upon our bookshelves in efficient literary form is a real public advantage. After conscious recognition, to give precision, permanence and interchangeability to knowledge is the next great stage of progress and power. Literary form implies not only the facts of knowledge, but their analysis. It secures greater precision. It reveals not only what we know, but what we don't know—the next step to further knowledge. It is the static and accumulative knowledge process. What is once placed before the world in articulated form can never again be lost to mankind. In the past the secrets of many arts and industries have died out, have been lost either temporarily or permanently to mankind. Such a thing cannot happen after being stereotyped in literary form. Then such knowledge is convenient and accessible to all. On the other hand, what of experience is not articulated and formalised is knowledge indeed, but it is personal only. It is not gifted to the world and futurity. It dies with the individual. It has to be learned, discovered afresh, by each individual worker for himself.

Industrial knowledge may be classified as knowledge of the science, the current history and the practice of industry. The science is the knowledge of the principles and policy of industrialism. The history is the record of the daily experience, the events and facts of industry. The practice of industry implicates a knowledge of man's needs, wants, tastes and purposes, the knowledge of substances and processes required to satisfy them, the distribution of these products throughout society, and of contingencies that are associated with or arise out of the various movements and operations of that distribution.

Of course industrial knowledge is knowledge appertaining to industry. But, in virtue of its relation to

industry, it has a special knowledge characterisation. Industry is of the nature of action. All industry realises itself in specific material forms. Industrial knowledge is applied knowledge—knowledge applied to the concrete wants of everyday life. Knowledge only becomes industrial knowledge when it has acquired this practical character. It will thus be seen what an important aspect knowledge of process *per se*, knowledge of practical adaptation, becomes. It is a form of knowledge peculiar to industry. In no other department of life, in no other science, does this question of applicability, of practicality, arise in the same sense that it arises in industry. Though economic process is based upon scientific process, yet there is a wide difference. The means, machinery or process by which a scientific discovery is successfully applied to the practical needs of mankind, bears a very distant resemblance to the careful, delicate and deliberate methods of the laboratory. Many methods are not practicable in ordinary industry that are quite successful as scientific experiments. The necessary hurry and roughness of manipulation in industry prevents the adoption of many possible scientific processes. The question of cost also profoundly modifies industrial process and its success. The further question of bringing a process within the capacity and reasonable effort of the workmen is another contingency to be thought of. We are not saying too much if we say there are as much talent, ingenuity and special knowledge required in adapting a new scientific discovery to the practical conditions of working life as there are to discover and demonstrate the scientific truth itself. Though many new truths are discovered to science by accident, no accident ever built a factory or produced working machinery. Further, in knowledge applied to industry the conditions of exhaustive isolation are not present, a resource always open to the laboratory.

The body of industrial knowledge, as of all other kinds of knowledge, is ever changing. It not only manifests a constant advance, but it is ever being

modified within itself. There are ever being new truths discovered, new applications devised, with all the modifications such changes implicate. We should say that not a new substance is discovered, or new force invented, that does not affect directly or indirectly the whole industrial movement. Occasionally there is an epoch-making addition to our knowledge which transforms the whole field of industry. Such were the inventions of the steam-engine and electricity. But minor changes than these affect the whole of industry. The discovery of a new minor substance, for instance indiarubber, affects the whole field of industry, because in every department some useful form of service can be found for the new substance. The bicycle is a new and simple mechanical principle. It is not only a new form of industry, but its convenience and rapidity is affecting the established relations of general business. It is doing more. It is affecting the habits, manners and health of the people, and is producing an even greater social than industrial change. So we may say of all forms of industrial knowledge. They have an influence and interest outside of industry, and give rise to many new social problems. We may think, then, of the great body of industrial knowledge as a tide—a restless, changing, rising movement, but with the idea of constant, resistless advance most in evidence.

We would not have it supposed the general body of knowledge does not affect, is not useful to the more limited movement of industrial knowledge. In daily experience the person of widest culture is the most effective industrial unit. And it is easy to see why that is so. The individual of wide general knowledge has a wider field of suggestion always before him. The general body of knowledge is the fertiliser of industry, the source of new impressions, suggestions and adaptations. Take, for instance, botany as a field of science far removed from practical industry, what a wealth of mechanical suggestion there is in study of the physical forms and functions of vegetable life. There is not an engineering problem not successfully anti-ci-

pated in organic structure and function. On the other hand, there is nothing more remarkable than the barrenness of direct, specific logical inference. There seems a limit, and that a narrow one, to the projection of strict logical thought. That explains the timeous development of industry. It seems as though those living in a movement were bound in the chain of their surroundings. It seems as though the loosening of these chains came from without more than from within. Outside knowledge gives a certain aloofness, a higher altitude of thought, from which a juster, fresher and truer view of the whole movement is attained. No doubt also our choice of outside reading and study, being our own natural and unfettered choice, is more readily assimilated in many cases than the compulsory knowledge of business. Then special studies are indulged as a rest and recreation, and therefore when the mind has the freshness and alertness of recent recuperation still upon it. No doubt we read more lightly in recreation and pass much useful suggestion over, but thoughts that do strike are most likely to be those that fill the gaps in our current intellectual synthesis. Thus we can understand that the fertilisation of industrial knowledge comes mostly from the outside, from the general body of knowledge.

Nothing is so just as nature. It is full of compensations and generous returns for service rendered. We have seen that general knowledge assists industrial knowledge. Does the latter, then, make no return for that service? It would be very remarkable if it did not. We think industrial knowledge renders, among other services, one general and two special services to general knowledge. In the first place, industry impresses the world's thought with a tone and attitude of present moment practicality. It is of this world, it is of the interest and concern of humanity as a whole, and of every living unit in it; and now, just now. It withdraws the mind from the dreary hallucinations of a distant and concealed past to the life and work of the moment and the world. It also throws a cold blanket

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upon undue speculation and problematic conceptions as to the future here and the future hereafter. The bane of humanity has been the constant thought return to the inexorable past and to the hypothetical future. Whatever the future may be, it is best solved by the work of the living present. It gave a permanent, positive and scientific cast to the world's thought.

The two specific services by industry are—(1st) The sense of utility which it supplies as a test of success and as a guide to action. Without a doubt it is industry that gave the utilitarian principle to ethics. All efforts that are not specifically useful to life and truth are undesirable forms of effort. (2nd) Looking back on history, on ethics and logic, we see that the lack of all sense of relative importance was one of the greatest failures of intellectual interpretation. The childish criteria, the importance attached to trifles, while matters of vital import were neglected as unworthy of cultured thought, is one of the painful revelations of experience. Now, in industry the idea of value, appraisement, accurate proportional measurement and estimate has gradually permeated the public mind with the idea that all thoughts, judgments, movements and actions are not of equal, or even of nearly similar, importance. The doctrine of the relative importance of ideas, in the truest and most practical sense, is now receiving the attention it deserves at the hands of psychologists and logicians.

We have said that "industry is only possible in and through knowledge, that the success of industry depends on the extent and application of that knowledge." Now, in what sense does the success of industry depend on the instrumentality of knowledge? Of course, by knowledge we mean true knowledge. Truth is the conformity of our thought with its objects. Untrue knowledge has no such conformity. False or mistaken knowledge is not only no assistance, but it is an impassable barrier to successful industry. But assuming that by knowledge we mean real knowledge, the truth, what is the nature of the interdependence between that

knowledge and industry? Knowledge is non-contradictory. No one truth can traverse another. Thus in the fulness of knowledge there is implicated singleness of purpose. All knowledge is correlated to all other knowledge, therefore it has unity of action. But knowledge points to the necessary means and steps. It thus excludes unnecessary and roundabout processes. Knowledge therefore points out the shortest and most direct road to the attainment of a specific end, and thus excludes all waste of energy and materials. Knowledge shows how much is adequate. Knowledge in itself, *per se*, has therefore economic utility and economic value. It directs us to the intelligent and useful purpose through the most effective and least wasteful means or processes. We can best illustrate the value of knowledge by comparing it with the advantages of the possession of capital. If a young man starts life with a capital of £10,000 he is at an immense immediate and prospective advantage compared with the person that has none. Both start at the same time, but the one with a capital which will increase in geometrical ratio starting from a basis of five figures. The person who has no capital has his first £10,000 to make. Before he has made that sum his rival has probably made half a million. It is the same way with knowledge. A person beginning business with a good stock of knowledge starts with an intellectual capital, which a man with equal ability but less knowledge may take half a lifetime to acquire. Success increases in geometrical ratio. Knowledge and capital increase in geometrical ratio. The measure of success, other things being equal, is the stock of both you start with.

The recognition of the large amount of practical knowledge in the most ordinary act of skill is seldom present to the mind. That is, a very common act of skill involves an amount of personal observation and knowledge unperceived and unknown to the onlooker, and very seldom consciously recognised by the operator himself. We will take the case of rifle shooting as an example that can be fully apprehended by the people.

Suppose, on an average windy day, a rifle is placed in a mechanical rest at a distance of a thousand yards from the target. It is exactly set so that each shot, in the absence of any disturbing condition, should strike the centre. Ten shots are fired, how many have reached the bull's eye? If the shots had been fired in a covered gallery every one would have counted a "bull." But out in the open air with a strong and gusty wind blowing possibly not a single shot out of the ten scored. When you ask the reason you are told that besides the mere exact alignment you have to allow for the direction of the different air currents and for the different wind velocities. You have to study the light, recognise mirage, the effects of sunlight, and distinguish between true and false light conditions. If you are not shooting from a recognised distance you have to calculate your distance, a very complex and intellectual process. Thus we see what an amount of observation and experience, which is knowledge, enters into the most common mechanical efforts.

We must, however, give an even more simple case than that of rifle shooting, lest it be said that the commonest experience requires no knowledge. We will take the game of golf as illustrative of the commonest acts of mechanical skill, the most ordinary form of labour. What of knowledge is implicated in playing golf? You have to drive a ball from an acknowledged point, with the fewest strokes, into an already formed pocket in the ground some distance away. The distance between tee and pocket varies from 100 to 300 yards. Between the tee and pocket there are many obstructions called hazards. The first consideration in striking the ball is to concentrate energy upon the effort, to give your stroke effective power. But you must also give to that stroke the greatest precision. It requires impact with a certain part of the ball, because only at one precise spot is the force applied practically effective. The ball struck too high or too low does not respond to the stroke, its flight is short and erratic. It must be driven straight. If need be,

you must allow for wind. You must keep clear of hazards. Arrived near the pocket your aim is not strength or power, but the accurate measure of distance, of weight, of resistance.

Some players are able to put spin, or side, or twist on the ball. Keen and accurate observation of the smallest inequalities on the green surrounding the pocket is required. To all these must be added sound judgment in the selection of your tools, your ball and clubs. All these contingencies have to be met in every game of golf. For our purpose the game is interesting as bringing home to our readers how much of knowledge is implied in the commonest act of skill. Also because it gives the data on which to numerically estimate the range of difference in effective play, the range of power and knowledge, the range of improvement in ordinary skill.

We have in our mind's eye a golf course near our native city. On that course of 18 holes over hilly ground and amid at least average hazards, after a person has started to learn, if he does the course at an average of 8 strokes per hole, he may be said to have reached the stage of primary initiation and become a golfer. That is, if he does the whole course in 144 strokes he may be accounted playing a fair game of golf. And, after all, to do a difficult course at an average of 8 strokes per hole shows the elements of considerable mechanical skill. Among the best players the course is done in 72 strokes. It is often done in less, in 70, 69, and once or twice in 68. But we will take 72 as a common possible score. Now, a score of 72 is exactly one-half the score of a recognised beginner at 144. After becoming a recognised player, by skill and knowledge he can double his efficiency, he can secure the same end in one-half of the number of specific acts or efforts. To what, then, can we attribute this increased efficiency? It is not to increase of physical strength or improvement of the bodily organs. These are unchanged. Do you say to superior co-ordination of the organs and functions of the body?

We answer that increased co-ordination of conscious organ and function is very largely, if not solely, an increase of knowledge. Perception, more accurate observation, is a matter of knowledge. Force unguided, unilluminated, is blind, inoperative. Nay, it is further to be noted that the player's increased efficiency is secured with less exertion than his earlier unskilled efforts. No, we cannot resist the conclusion that by trained skill, which is effort guided by knowledge, the power or effectiveness of labour applied to a specific end can be doubled. We say that golf is a fairly representative act of skill, of thousands of industrial operations. Without going the length of saying that with increased technical knowledge such an increment of improvement could be attained over the whole field of industry, as we have demonstrated takes place every day in the region of golf, we do say that the public mind still fails to grasp the immense probabilities lying undeveloped in unenlightened industry.

When we leave the individual worker for the professional expert, the industrial unit for the industrial synthesis, we find a standard of efficient or operative knowledge as needful and as helpful. Our main industries are now conducted on a scientific basis. That is, the fact of a scientific foundation being required is acknowledged though the exhaustiveness of the scientific process is still a matter of distant expectation. In some private undertakings there are experts who attend to nothing but the supervision of the science side of the business. We have conversed with old persons connected with the brewing business. These persons remembered when it was only possible to brew during six months of the year, when the brewer's only tools were his five senses—his sight, taste, hearing, smell and touch, or temperature. His barometer was the simple dipping of his finger into the tun. At that time (sixty years ago) a brewer the season through, and counting imperfect manipulation and returns of beer gone wrong, only obtained one-third of the marketable produce, now

obtained from the same cost of materials treated under modern methods.

Let us give a bird's-eye view of the body of knowledge implied in being a successful brewer as being representative of the body of knowledge implied in every branch of industry.

In the first place, in selecting the site of the brewery he has its contiguity or convenient relationship to his customers and to road and railway facilities to bear in mind. He has to find these advantages subject to the selection of a good brewing water. This is a most delicate and scientific matter. A suitable water means the basis of success, an unsuitable water a constant gravitation toward failure. He must erect his buildings not only to save labour, to permit of extension, but also that the proximity of one building does not interfere with the inherent processes of another. Then he has to select his materials, his barley and hops, his saccharines, and wood and materials. It requires long study and years of observation to select at sight the barley and hops which will produce a beer popular with the public, that is, taste, flavour and style, and at the same time reasonable in cost. The barley has to be malted, a subtle process requiring a specialist's supervision in itself. Then there is the maceration and extraction of the desiderated materials. Next the fermentation, requiring a knowledge of chemistry, thermal physics, and bacteriology. A brewer must have a good mechanical or engineering knowledge. He has thousands of mechanical contrivances to effect his various operations. To all these arts he must have a good general business knowledge, to manage all the arrangements inside and outside of his brewery. All that knowledge, and the personal qualities to apply it, is implicated in being a successful brewer. If the brewer has not the personal knowledge himself he has to pay, and pay sweetly, for the necessary services of other people. Might we point out that the brewing industry informally anticipated the science of bacteriology and the whole art or science of sterilisation. We think it very remarkable that

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Pasteurism taught the brewing industry nothing in principle. Though, as showing the advantage of conscious, formal and precise knowledge, the immense advantages of scientific data are amply exemplified in the practice of modern brewing.

In all departments of industry we find this truth illustrated, that your success depends on your knowledge. If you take the raw materials and the finished products of the present day and apportion the result between labour *per se* and thought and knowledge *per se*, it is the latter that is far and away the most important. It was not always so. Formerly the mechanical element counted most largely in the result. Now efficiency, success, is practically knowledge. The measure of your knowledge is the measure of your industrial success, or at all events of your potential industrial success. With the progress of knowledge the relative importance of the intellectual as compared with the labour factor in production must ever increase.

Our economic knowledge is not yet exhaustive, is not even approximately adequate. We must reduce to scientific form all the complex of industrialism in its every aspect. All other factors will fall into line or become matters of reasonable interpretation if we scientifically formulate all that measures and numbers can reach. The truth, the light, is not only a revelation of knowledge, it is an impelling principle. Our raw statistics are not nearly full enough. Our numerical generalisations by the aid of averages and the index number not sufficiently numerous, if we may be permitted to use such mild language toward an economic method that is only in its infantile stage. Economic movements in mass are not differentiated and synthesised at all. This is a form of knowledge we need. We require every industrial movement and distinctive interest, every industrial synthesis, diagnosed, differentiated, and our reasoned conception of it stated in definite and easily apprehended form. In fact, we are still largely groping in the dark, and an immense field of economic knowledge has yet to be created. .

We have given illustrations of the knowledge involved in common industrial experience, let us give an example of our profound ignorance. We would imagine that upon the matter of a common necessity of life, the principles underlying the making of a good pair of boots or shoes, there could at this time of day be neither doubt nor misapprehension. Boots and shoes or their substitutes have been in use not only hundreds but thousands of years. They are necessities of life to 500 million human beings. They are therefore matters of common knowledge and experience. Yet in connection with the supply of boots for our army in South Africa there were not only complaints as to inefficiency, but in the criticism on these complaints in the public press there were the most astounding blunders and confusion of ideas. There were in the course of the discussion above a dozen varieties of fundamental conception and criteria. Some advocated a light boot and some a heavy one. Some would have soft, pliable soles and easy fit. Others a rigid sole and tight fit. Let us just see for a moment what are the primary conceptions at the bottom of a satisfactory boot. A boot is meant to protect the foot from the contact and wear of the hard ground, from the inequalities, the sharp stones and the thorns of the highway. It must protect the foot from the heat of the sun on the one hand and the cold and frost on the other. It must keep the foot dry, must be impervious to rain, dew or accumulated moisture. It must also be made to close fit the form of the foot. The substance, then, of which the boot is made must be soft yet firm. If the sole of the boot is rigid and hard men cannot bear the constant rest on them. A wooden sole is of no use, it is too hard, you might as well walk on the hard road. But if soft and not also firm the foot has no shelter from the inequalities of the road. Let anyone walk barefoot on the gravel footpath between his mansion and the lodge gates and he will form some idea of a soldier or labourer walking on a rough road with soft-soled boots. The uppers are not only the apparatus for carrying the sole but they

shelter the feet from heat and wet. They require to be pliant, impervious to wet, and, what is very important, vaporous. That is, while excluding wet they must allow the perspiration from the foot to freely escape. Further, the substance boots are made of must be stable, that is, must return each day to its original or proper form. Now it will be seen how much is implicated in the manufacture of the commonest articles of everyday use, and what is meant by technical knowledge and training. We don't believe that there are five bootmakers in the British Isles that could pass an elementary examination as to what are the conditions of a perfect boot at this present moment. If this had been the first campaign in which boots had been used, or if when used had been complained about, we would think nothing of it. But we remember the Crimean campaign, and the war between North and South America, in both of which the same complaints were made and reiterated to the close. No complaint is so common and constant among our working classes at the present day as the hardship and torture of these clumsy misfitting covers of the feet. Nothing is so physically exhausting as discomfort and pain caused by bad-fitting clothing and bad-fitting boots. Physical pain is economic loss. Ask a physician what is the most exhausting form of physical experience, and he will tell it is pain. Surely it does not say much for our economic knowledge that the very first principles upon which a common necessary of life has to be constructed is still a matter of guess-work or individual fancy.

We will give another illustration. Is it creditable to the twentieth-century industry that the conditions determining prices, or the process of fixing prices, are still matters of personal and adventitious judgment and not of formal law? That is, the conditions determining the price of commodities have apparently not been exhausted, and their relations and relative preponderance algebraically calculated, and their ultimate synthesis or consensus of value specifically stated on stable and always-to-be-calculated lines. The data and criteria

are not so obscure or so intricate as many of the actuarial data successfully expiscated every day by our actuarial societies. The geometrical ratio affecting power and value are numerous enough to form the groundwork of the calculation. There are data for fixing all the limits of correspondence and variation. At least there cannot be the slightest doubt of the construction of approximately accurate tables for the determining the price of all commodities. All the facts are there. There is no hidden mystery, though there may be a great deal of labour and actuarial skill in reducing the complex conditions of price to strict practical and working rules.

But we have another observation to make concerning knowledge in general and industrial knowledge in particular. We must view the whole body of knowledge, not as a mere collocation of facts and their classification, but as a living and organic movement. We must not only view knowledge as results, but as an ordered evolution of thought. Life implies organisation, development on specific lines. If we only view thought, knowledge, as the product of conscious intelligence, these intelligences are themselves subject to law, which law must be reflected in their accumulations of truth. At present we have classification and generalisation of results. Knowledge is classified as scientific, religious, psychological, logical, mathematical, economic, and so on. Now these are simply classifications of the object matter. They do not picture to the mind the motives, the movements, the co-ordinations and the inter-relations, the impelling principles toward knowledge, towards the discovery of truth, towards the forward movement underlying the mere accumulation of knowledge. Why, what do we mean by the thirst for knowledge? It must be something antecedent to and different from that knowledge itself. What is the effect of new wants and desires, of new economic considerations, on the discovery and character of knowledge? What are the laws of the cross-fertilisation of knowledge? How is it that we cannot extend the application

instantly of a new truth to all the ramifications of thought? What is the character of the process of adjustment and elimination? We see that knowledge is like human life. It is ever receiving accretion—it passes through assimilation to accumulation. Then follows, or rather accompanies, decay and the elimination of the transient, untrue and unassimilated. We see the constant recrudescence of error. The moment the activity of the race has demolished an error, the same error creeps up again. Is the race for ever, Douglas like, to be slaying the hydra-headed monster? In what way can we for ever cut off the connection of the world's truth from exploded error? It is the principles governing the growth and inter-relations, the vitality of knowledge, that need more attention. For that purpose we suggest a start through industry. It was and is the cradle of all true knowledge. It is not only the point of union of the psychic, organic and physical, but it is nature's own manifestation of unconscious consciousness and will antecedent to all formal knowledge. It is now a manifesto of conscious will, consciously responsible and consciously determinative. But it is all that under forms and conditions more amenable to formulisation and scientific treatment, and therefore to final reduction to the laws of reason, than any other form of human action or thought, or to any form of phenomena outside the physical world.

And let us say that never before were the instruments and opportunities of formalisation so varied and effective. We have in the growing body of our statistics, of improved method, of the numerous organisations and societies for the scientific study of industry, a power for knowledge unknown before. We have our higher literature. The state has assumed an attitude of recognition toward the scientific formulation of industry. This collective effort is the modern feature. The facts of industrial life are beyond the power of individual effort to collect and treat. It requires association and organisation, long-continued and unbroken effort, to secure what is required. It requires a large expenditure

of money, and all these conditions can only be secured by means of our chambers of commerce, our learned societies and the state organisation itself.

It would be impossible in treating of economic knowledge not to refer to the great economic importance of the public press of the world. Three most powerful modern agencies affecting industry are, the rapid transmission of thought through the agency of the post-office and telegraph service, the growth of the press, and the power of public opinion. These three forces can be conveniently treated from the point of view of the press. The first thought is the material or mechanical aspect of it. The newspaper is a vast accumulation of facts, all useful, some essential to business. These facts are collected from all over the world. We have commercial news, prices and shipping news, from every market of the world. They are collected every day. And they are not the news of distant places a month or two old, but the news of to-day records the events of yesterday, perhaps even of this morning. We open the columns of this morning's *Times*, and count the number referring to specific commercial data, and we find that out of 108 columns comprising the newspaper, not less than 48 contain exclusively business matter. In many instances the proportion is larger; newspapers of large circulation devoting more space than the *Times* does to commercial data and criticism. To say that about the half of the space of our newspapers is devoted to the services, claims and calls of industry illustrates the usefulness and influence of the press upon economics.

Then to apprehend the power of the press we must look at the immense and rapid circulation of the papers. There is hardly a family in the country that does not have either a morning or an evening paper, or, at least, access to one. The price charged brings them within the reach of all at the smallest pecuniary sacrifice—a penny or halfpenny being the price of the vast majority; a very important consideration in the advantages of such a powerful agency.

The economic contents of the press cover the whole economic field. Every phase of industry is reflected in their columns. The simplest of these is the bringing of the buyer and seller together through advertisements and announcements. From the large sums spent in advertising goods it must be found to be an immense advantage to individuals. It must be an equal advantage to the public, or they would not respond. That it is an economic advantage we equally do not doubt. Those that remember the bygone days wherein individuals had to wander through the streets and shops seeking for the articles they wanted can well appreciate the new state of affairs. Say a newspaper has a circulation of 200,000 copies. That will represent direct contact with 500,000 of the population daily. We would estimate the cost of the business advertisements at £1000 an issue. Against this cost of £1000, however, we set a saving of 15 minutes of time on an average of the 500,000 who consult its pages. We believe that to be a moderate estimate, because much of the information could come in no other way. Now, 500,000 15 minutes is 125,000 hours, which, valued at 6d. per hour, represents the large sum of £3125 of saving to set against the original advertising cost of £1000. As that estimate is a daily one on 500,000 of a population the importance of the figures on a yearly and national estimate will be self-evident.

Then observe the immense collection of facts appertaining to industry. The record of the quantities, movements and prices of commodities and stocks all over the world. The price of pigs and pork in Cornwall, the take and price of herring at Stornoway. The movements in grain in Chicago, the price of cotton at New York, the output of gold in Australia, the tea shipments at Shanghai, the diminished acreage under coffee in Ceylon, the price of hides at Riga, and the rise of wages of the silk-spinners at Lyons, these and a thousand others, we beg pardon, a hundred thousand others, are presented to us fresh and adjusted every morning in our newspaper. A great deal of the data is not only

a record of fact, but a generalisation of many facts, the average of many single transactions. Over and above we must remember that the press is more than a mere collection of isolated particulars. It is history; it carries within it the thread of historical continuity. The facts of to-day bear a true correlation to the facts of yesterday, and they are meant to be the no less stable basis of the comparison of the facts of to-morrow.

Then look at the useful service of constant suggestion to be found in their columns. Some of the suggestions are direct and some indirect. The direct suggestions are those of specific improvements or inventions of industrial processes or accounts of new markets or fields of industrial enterprise. Though these suggestions are usually in one interest they suggest useful thoughts to many others. The indirect suggestions come through the science articles, the description of new scientific discoveries, and the account of the proceedings at the meetings of different scientific societies or learned bodies. The press usually open their columns to those who have wants to be satisfied or grievances to be remedied. Their descriptive articles of industrial events and new undertakings also not only convey to those inside industry, but to those outside of it, a more effective picture of what is passing in the country, as well as serving to stimulate the public interest in industrial affairs. After all, those outside industry have a share in guiding its destinies and conserving its interests as well as those within its ranks.

We cannot forbear to mention the advantages to commerce of the criticism of the press. Pressmen are prone to criticise and find fault. Naturally, criticism being the special editorial function. They expose many a commercial fraud and grievance, many an industrial danger. Besides, the principles and policy of economics have always been in an especial degree under the guardianship and direction of the press. If politics is the province of statesmen, religion of priests and law of lawyers, industry has secured its chief direction from the press.

We have to mention another function. The press has assumed a function of guidance as to financial affairs and investments. It now stands in a responsible and fiduciary position towards the general public in matters of finance. Not only is the matter of the fidelity of the data supplied, its trustworthiness and accuracy desiderated, but judgment upon these data has become a public necessity. On the part of the people their savings have to be invested. Hundreds of millions of the savings of the commonalty have to be invested every year. That nowadays can only be done through joint-stock investments, through share capital in industrial undertakings. The only guidance and the only guarantee among these to the mass of the people is the vigilance and honour of the press. Even the mercantile classes themselves depend on the financial summary and criticism of the press upon money market movements to adjust their future pecuniary indebtedness and payment.

Then, again, we have to point out that the initiative in economics bears a twofold aspect. This is the initiative of the individual, the initiative of associated effort, the initiative of the particularity of the industrial movement. But there is another initiative, that not of particularity, but of the wider and collective movement, that of the conceptuality and notionalty of industrialism. This initiative of notionalty we must have as the nexus of initiation itself a notional and collective form. Now, of all initiative collective forms there are none so manifest, so convenient, so effective and so forceful as the public press. They give the cue not only against grievance, but they lead the synthesis, they suggest the time and opportunity. If it was only the power of determinism as to time and opportunity the press now possesses, it would be sufficient to mark it as a unique form.

CHAPTER XXXI

THE INTELLECTUAL ELEMENT IN ECONOMICS

WE are nearing the examination of the formal^ological elements involved in industrialism as a world movement, that is, industry as a conscious logical movement. Before we reach that point, however, we would examine that intellectual element which is not conscious of itself, which is not formalised, and which can be best described as a mere mental state. We have seen that in æsthetics and morals there is a large unconscious element always operative, and which is none the less a powerful force that it has not reached the stage of intelligent articulation. Similarly, there is in the mind a number of operative states as distinguished from formal and conscious processes. It is through these mental states, as distinguished from conscious logical processes, that the most of the industrial operations in former times, and a very large part of the commoner industries of the present, are conducted.

We would mention in the first place imagination. This faculty of mind is not bound by any strictly formal rules. Indeed, it is of its essence and usefulness that it is free from trammels and limitations. It is pictorial representation. And it is pictorial representation of two kinds. Representation of the actual and representation of the potential. In the one case you call up the picture of a thing, an event, or an operation. In that case it is of the essence of the picture that it should be really representative, really accurate. While thus projected upon the mind it stands in a relation of apparent externality to the individual; he can examine and observe upon it; or he may adjust any part of the

picture into new and improved relations. You view the picture as a visitor to the National Gallery would view one hanging on the walls. The process is something different from memory in the ordinary sense. You may have a powerful memory of language and things without the faculty of pictorial representation. In industry there is nothing more useful. To carry in your mind a vivid and true representation of your business in all its details as a constant and continually adjusted scene or operation is a great advantage. Imagination is a powerful aid to success in industry. In the other case, that of representation of the potential, it is no less useful. You can conceive any possible fact or relation. You can conceive a form or a combination of force not yet in existence, having no existent representation in actuality. It is constant new suggestion. It is hypothesis awaiting realisation. To this process, which is not logical and which you cannot tie down in the formal laws of logic, a very large proportion of the new and progressive in industry is due. It is experiment without the cost and trouble of actual production or creation.

Another mental state operative in industry, which is not of the nature of fully-developed reason, is imitation. Of course there is a form of it where the industrialist specifically addresses himself to duplicate an article. Conscious intention is there, but it will be admitted to be a proceeding of very limited intellectuality. Every day we see works of art or objects of skill of very high intrinsic merit copied with such minute fidelity as to require considerable talent to distinguish between the original and the copy. In fact if a nobleman lent a masterpiece to be copied, it would only be through the honour of the artist that he got back the true original. Yet these mere imitators or copyists could not of themselves create an object of any considerable merit whatever, or without the original before them create a colourable imitation of it. Imitation lacks creative initiative and power. Thus it is that some of the lower races have an imitative power far exceeding the white

racés, and yet have not the initiative, constructive and creative skill of Europeans. We know that in India and China a native artificer will make a skilful copy of any particular part of a machine who could not construct a new machine, or generally repair a machine in an effective relation to its specific purpose. We can see, then, that simple imitation is not of that class of operations which implies a mind endowed with a high, or indeed a very common order of intellectuality. In operations of industry there are much of labour and manual skill which partake of this simple character. Whatever of intellectuality belongs to them belongs to those who devised the original article or the original process.

But there is in industry another form of imitation which is more of the nature of habit, of transmitted experience, or of local custom. There are large branches of industry which, until recent, or at least modern, times were carried on without the slightest conscious knowledge of what was contained or implicated in their various processes. Accident, slowly accumulated experience, experiment, had formed a custom that passed from father to son the same unvarying practice in which much that was superfluous as well as what was useful was embraced. A process of natural elimination removed the forms of industry that had not somehow lit upon an essential and saving truth. It was the law of the survival of the fittest without knowledge and intelligence thrown in. Forms of agriculture, trade guilds and cults, carried down with rigid accuracy and formality, a concurrence of circumstances within which was hidden and unrecognised the essential operative principle. Indeed, we may say that all old-established forms of industry have a tendency to pass from consciousness and originality into custom and imitation. The father is the inventor, the son is the intelligent continuer, and the son's son is the blind imitator. Even in the most of trades at the present day there is little formal teaching. The young hands just watch and imitate the actions of their elders. The apprentices

are supposed to learn themselves. Soon we believe much of mere imitation, we may say nearly the whole of it, will pass away before fuller knowledge and adequate teaching. But the general principle of the large part unconscious habit and imitation still plays in the operations of industry it is as well to recognise and remember.

In a general way we may conceive thought applied to industry as being manifested as thought itself, as governing conduct, or as directing the construction or transmission of useful and desirable things. We must also conceive of it as entering into and determining every operation and relation of industry from the lowest to the highest; from the labourer turning over a clod of earth to the banker or financier directing millions he never sees or handles, as well as to the thinker who formulates the conditions on which alone industry can be successfully carried on. To perform the very simplest form of labour implies at least a knowledge of cause and effect, the general aim of work, the suitability of tools to their purpose, a knowledge of the resistance of bodies and of leverage to overcome inertia or acquire purchase. To discharge the highest function of industry requires intellect and knowledge of the very highest kind. In the simplest operations the worker is in immediate tactual or visual contact with his work. From that simple stage we advance through a series of relations in which the material element appears in less and less immediate personal contact with the individual until we arrive at operations in industry, the materials of which are abstract relations, many times removed from the concrete particulars themselves. At the same time, while the physical contact of the individual with the material phenomena of his operations diminishes and becomes further and further removed, the number of movements involved, the complexity of the operations, the mental processes required, increase in corresponding ratio. Now, in whatever else these multifarious operations may differ in, they have this in common, that they must always result in the production of

some object useful to man. Whatever of thought or action does not result in the production, interchange or accumulation of wealth, whatever else they may be, they are not of the nature of industry. Thought in practical industry takes the form of action.

Throughout this whole of industry, this living, surging movement, there runs the reign of law, the bond of reason. It matters not whether this law is recognised or not, whether the operations are those of a simple mechanical nature, or the most abstruse of calculations, they are governed by the laws of reason and proceed on logical lines. It is reason which binds together all the flux of economic phenomena, and it is the purpose of this chapter to show the logical processes by which this synthesis is attained and maintained.

We have said the industrial worker in his activities lives in constant touch with actuality. He lives in constant and immediate contact with his work. His products and processes are not merely present in his thoughts, they are in immediate touch with him personally. He sees them, touches them, moves them, values them, transfers them, and forms judgment upon them at every moment of his life. Thus in economic effort the individual starts at the very foundations of logic. Indeed before it, for he stands before an unformed flux from which he has to secure certain particulars. He is surrounded by economic heterosity. He has to form a foundation which in fact and thought is antecedent to, and a necessary preliminary to, the application of any logical process whatever. He begins with the mere elemental facts of observation. He has an article to make. He has to select the necessary materials from among many others. He selects an article apparently suited to his purpose. He recognises its properties. He views its shape and length, he tests its hardness and feels its weight. He observes its colour, its temperature, its freedom from flaws and blemishes. He tests its dryness, its porosity, its toughness and elasticity. He estimates its applicability to his intended purpose. He inquires about its

price. Finally, he forms a judgment upon it. This article will suit my purpose. Thus in the ordinary business of life the initiatory moment brings you in contact with the elemental condition of things which are not so much a part of logical process as a preliminary to it. They are perceptions in which every sense is called in to play a part. In industry every sense is percipient and participant. For instance, taste and smell are very important industrial qualities. Not only do our senses of taste and smell seek gratification in the markets of the world, but the selection and valuation of these pleasurable qualities require a very keen and highly-educated sense of perception. We would say, then, that industry in an especial degree starts from the very foundations of things, with the observation of the simplest facts of life, of coexistences, of numbers, quantity, sameness, resemblance and difference, equality, size, weight, and all these facts and judgments which approve themselves to our mind by the mere circumstances of presentment, and which form the great bulk of the phenomena dealt with in the industrial movement. It is a fact that the most of the useful progress of the world is from the closer and more accurate observation of elemental truths, deeper insight, and no better school for its exercise is to be found than practical industry.

We have left economic heterosity, and are now in particularity. What is our next formalising stage? It is manifestly differentiation and enumeration. After individualising particulars their numbering seems the next stage. In all economic transactions a distinguishing and numerical element must enter. In some departments of industry it is nearly everything. Enumeration and computation is the groundwork of much of distribution. Warehousemen, for instance, selling manufacturers' made-up goods have little of logical process other than numbers and computation. You would say that in mere numbers lay the technique of their trade. So also would you say that the groundwork of insurance, stockbroking and finance

lay in figures. Number has an even determining relation to industry. It is number, quantity, which determines whether a commodity has any economic value at all. An excess of the numbers of any article reduces their value; unlimited quantity is the negation or destruction of commercial value. In the same way any decrease in the number of an article means an enhancement of value, a real shortage or scarcity, a prohibitory price. The mere numbers of an article determine a market.

Measure is the next stage in the systematic logic of economics. It is a stage higher than particularisation and enumeration. It is numerical abstraction. It is of universal validity, permeating and determining every form of industrial effort. It is one of the *special* characteristics of the movement. Where there is no measurement there can be no value, and where there is no value there is no nature of industry. By measurement you limit and define specific phenomena on a scale and by criteria, whose arbitrament has the universal sanction. Measurement is thus a stable as well as a connecting process, a thread of reason running throughout the flux of the whole economic movement. Measure is a necessary preliminary to all subsequent logical process. The measurement is of two kinds. The measure of quantity and the measure of value. The former measures are commonly those of length, magnitude, capacity, weight, resistance and time. But in recent times measurement has become an industry in itself. Temperatures and force have become matters of such moment and intricacy, that their measurement has fallen into the hands of specialists. In every economic transaction the data falls to be described under one or other of the forms of mensuration. They are the basis of economic relativity, the stable factor between its ever-varying elements. But what distinguishes measure in economics from measure in other movements, is that measure, specific and definite computation expressed in specific and definite number, is applied to every form of material, to every form of force, to every relation,

and to every influence and intellectuality of the movement.

Though we have more than once alluded to this quantification of psychic phenomena we will revert to it again. It is of the utmost importance, not only in theory, but in practice. In fact, it is in demonstrating this fact in industry, that we look to ultimately establishing industry as a real science. Industry embraces physical and psychic phenomena. We want to demonstrate that both can be precisely and scientifically measured* so far as they appear in industry. It is admitted that at present we measure matter and some forms of force, and we *compute* the psychic element. We assert we measure in specific terms, the psychic not less than the physical elements.

It will be conceded that we estimate very extensive phases of psychic phenomena. For instance, we value the services of our highest judges, administrators and statesmen in real concrete numerical value. These services are entirely those of knowledge, character and ability. They are services of a purely psychic character. The largest remuneration is that of the Governor-General of India. £25,000 a year is the price we put upon his services. The scale of remuneration has often been discussed. But at the present moment there is a pretty general consensus that his services are justly recognised. In the same way, how much of the moral and spiritual, how much of human conduct and honour and ability is embraced in the public estimates of the year. In an ordinary year the national expenditure is 100 million pounds. Now, we say the nation, the body of intelligent opinion of the country, consider that they get good value for their money. When the country changes its mind, comes to think that it is not getting value for its money, it will change its advisers.

But have we an intensive valuation of the psychic as well as an extensive? Let us see.

We will seek for an ordinary incident. We will take a limit of time. We will take one hour. Now, if

we take the specific numerical valuation of the moral element in the lowest form of service, and compare it with the specific numerical valuation of the highest form of service for the same period of time, if we take a labourer's pay per hour for privation, and if we take the fee of a professional man or specialist for one hour's service or consultation, the difference between them will exhibit the limits of variation in the valuation of moral and intellectual service. The potential figure of the comparison will be indicative of the effective intensiveness of the operation. We cannot say from personal knowledge that labourers have ever valued privation at a halfpenny per hour. If they did that would double the limits of effective computation. But we know as a fact that such privation has been valued at, and is often valued at a penny per hour. A very generally recognised fee for the services of a specialist for an hour is £10, 10s. There are 2520 pennies in 10 guineas, so that the power or range of specific numerical valuation of moral service is as 2520 to 1 in that instance. The estimated value of one hour's privation in the labourer's case is as 1 compared with 2520, the estimated value of the service for the same period of a special skilled expert. We believe that ratio of comparison is not only a practically efficient ratio, but even a proximately accurate scientific determination.

We will take another case to establish the numerical valuation of a purely psychic experience. We are all familiar with "the cup that cheers but not inebriates." As a matter of fact that cup does far worse. It shatters our nervous system and fills our lunatic asylums. That, however, is by the way. Our teas vary very much in quality. They have different styles, qualities and fragrance. Each of these properties again vary in intensiveness. The result is a great variation in the price limits, teas varying in price from 6d. a pound up to 20s. The assortment and valuation of these teas has fallen into the hands of experts. Natural ability and training has developed among them an acute and very conscious sense of smell and taste. Now if we

take the limits of variation in their general valuations we will have established a numerical ratio representative of the intensity of certain mental perceptions. Without taking extreme examples, or what may be termed fancy prices, into which other elements than pure distinctions in sense perception enter, we may say that every day teas are assorted in the London market between the limits of 6d. and 5s. per pound. On these two prices the margins of value are determined by our lowest coin, a farthing. That is, a farthing a pound adjusts values, determines prices and affects sales. A farthing alone per pound stands between buyer and seller. A farthing upon 6d. is one-twenty-fourth of that sum; a farthing upon 5s. or sixty pence is the two hundred and fortieth. But as the limits of variation are contained between the lowest and highest price we have to deduct from the sixty pence, the highest price, the 6d. constituting the lowest. We are thus left with fifty-four pence as the limit of variation, and as the points or degrees of quality are expressed in farthings, we have four times fifty-four, which is 216 points of recognised difference. That is, an expert in tea can distinguish by his senses a difference in taste and fragrance to the intensiveness of as 216 is to 1. The fact established as quality is a psychological experience, the determining instrument is a psychic sense, the judgment is given to the world in terms of specific numerical valuation, a quantification of a judgment of quality. We are only at the beginning of knowledge in industry, as in everything else.

The next logical movement is the formulation of particulars, which is principally performed by the aid of statistics. They are abstractions expressed in number. It is a classificatory process and forms the data upon which many of the operations of industry are founded. It is not within the limits of our purpose to treat of statistics generally. They are now an accumulation so vast and intricate as to be recognised as a special science, requiring special knowledge and experience for their adequate treatment. But it is within our limits

to refer to them so far as they affect industry. Statistical processes are of a very varied character. A great mass of them are formed on very limited data and on very simple lines. Such are quotations as to market prices, rates, freights, etc. These are averages, simple generalisations of the daily and hourly transactions of our large business centres. The average prices quoted or adjusted in the official list in the produce market or stock exchange, formed on a few, perhaps a score, often on hundreds of single transactions are of the nature of logical generalisations, and have the same usefulness in industry that generalisations have in science; and for the same reason. They reduce the many to the few, or it may be to the one. They give a true general impression of many varying particulars; and an impression as stable and vivid in itself as to form the groundwork or particular of another generalisation. The most general service of statistics is just this simple form of generalisation; but formed upon an immense mass of particulars. The price of money at twelve o'clock in the day on the London Exchange is a generalisation upon probably a billion particulars, certainly hundreds of millions. Thus the service of the statistical process is not the expiscation of complexity but the massing and focussing into one view an immense number of very simple processes. That is the synthetic service. On the other hand, statistics are used analytically to fix or exhibit variant or chance elements. These are often very minute and obscure. Yet they have to be determined, and the ratio of their variation fixed within approximately accurate limits. For instance, all forms of risk in commerce, in the shipping trade, in exchange and in banking, have nearly all been differentiated and valued or estimated. Despite the appearance of utter independency of all known regular conditions, and of the apparent chance character of many of the phenomena, steadily year by year statistical treatment has reduced them to the regularity of co-existence, if it has been unable to demonstrate any causal connection among them or be-

tween them. Statistics thus give to business operations of a certain character that condition of certitude which is the result and of the nature of scientific form. They substitute for guesswork and gambling, knowledge and deliberately calculated profit. Where order reigns, if the profits are smaller they are more regular and sure, and do not contain the fever and cankerworm of uncertainty, which is the bane of irregular, or rather unformalised, industry.

These are the simplest and commonest forms of statistical effort. But they have other forms of greater complexity when the mass of particulars mount up to a nation's industrial activity, and when, in the compass of a few figures, an abstraction of that activity can be formulated as a unit of comparison for any period in our own or any other country's economic history. Of such a character are the index number and kindred abstractive forms. In the depth of the hidden economic truths they reveal these abstractions resemble some of the great generalisations of natural science. The records of authentic history that have come down to us have not thrown nearly such a representative light upon the contemporary common life of the nation as the calculations and abstractions in figures of recent economists and statisticians. As a logical instrument, for abstractive power, certitude and facility and convenience we have no instrument superior, indeed of equal power. Taking the index number alone, an instrument born in industry and primarily applied to industrial purposes, formal logic has had no such accretion of power since the time of Aristotle himself. We believe that to be another *special* contribution of industry to logic. We see no limits to its extension in the future, and look to industry in its every phase to be reduced to real conditions of certitude through its aid.

The economic movement is mainly synthetic and constructive. That is what we would expect in a living movement of constant growth and accretion. It is always building up, reaching out, and filling in the inventions and adaptations of to-day, being the

structural basis and starting-point of to-morrow. Within the movement itself all manufacturing operations bear this constructive character. So also do all businesses. The manufacture of a commodity is a real synthesis, a logical synthesis. A chairmaker constructs the legs, the back, the seat and the arms of a chair. He forms each portion separately, he fits them together; he has made a perfect synthesis, a synthesis of actuality. The individual parts are the particulars and the result, the chair, the generalisation. A business is another synthesis, though of a different character. It is a synthesis of action. It is formed on a wider circle of particulars. It is a higher induction in respect of embracing not only more numerous particulars, but also intermediary generalisations between the particulars and the common synthesis. It is to be noted how this abstractive process runs consistently upwards. The generalisation of the workmen in the form of the completed commodity forms the particulars of the higher synthesis of the merchant. The merchant in his sales and through his banker's account and investments merges his operations in the aggregate wealth of the country. And thus all through the economic movement constant synthesis of thought, action and material formed is ever taking place. It is a delusion that logic is the prerogative of the logician, or that the best logical training comes of the conscious application of logical processes. The real logic is the logic of life, the ordinary business of the people.

There is comparatively little of the deductive in the economic movement. In the pressure, aggression and constant change of industrialism there is not time for inference to assume the static form of the deductive. Neither is there that composure of mind and deliberativeness of action, the consequence or accompaniment of minds guided by first principles. There are comparatively few individuals who have exhaustively systematised their business relations and managed them by consistent reference to established principles. It can be done in certain cases, and we believe the number

of cases will steadily increase. These instances are, generally speaking, businesses dealing with common and extensive wants on old-established lines. Ironworks, coal mines, the simplest forms of distribution, banking and insurance are those economic forms that lend themselves best to formal arrangement. The best example is an economic policy, such as free trade. These may be described as the static forms of industry. But, as a rule, all the vitality and aggression of commerce is conducted on inductive lines.

There is little formal logic consciously applied in economics. The movement does not lend itself to rigid formality. There is a plasticity and variability in industry which cannot be bound up in the cast-iron fetters of formal logic. The difficulty generally lies in forming the premises, not in reaching the conclusion. Instead of using the syllogism business men exhaust error or fallacy. Experience has taught them the principal sources of danger or error, and when a problem is put before them for decision they rapidly run over in their minds the fallacies and errors their experience has taught them most likely to occur. It may be said that is an illogical proceeding. So it is, but it is not so unreasonable as it seems. Exhaustive formal thinking takes time. It is cheaper to take some risk than spend valuable time in exhaustive process. General correspondence and absence of transparent error on the one hand, and the conscious recognition of the possibility of a mistake on the other, is the normal attitude of mind of persons engaged in active business. It is astonishing with what promptness an experienced person turns to the commonest sources of error. It is to be remembered that each mistake is burned into the memory of the industrialist by the pecuniary loss that followed upon his lack of vigilance.

We have said that economic methods do not lend themselves with facility to logical formality. That observation might lead to the conception that industrialism tends to looseness of thought, lack of orderliness in arrangement. But though there is little recognised

form, there is much actual form. In point of fact, the very first idea that is presented to the humblest apprentice to trade is that there is a right way and a wrong way in everything, and that he can only attain his end by the adoption of, and rigid adherence to, the right way. Industrialism is a lifelong teaching of the universality of law and causation. Observe the steady, methodical, measuring and verifying procedure of the experienced journeyman as contrasted with the hurried rush of the apprentice. The latter has not yet realised the inexorable character of nature's processes. The industrial dogma of the more hurry the less speed has not yet dawned upon him. It takes some years to engrain into the apprentice mind that only by rigidly adapting his means and ends to natural and moral law can he make the simplest article or perform the humblest service. The industrial mind is slowly permeated with the conception of orderly and unfailing arrangement outside himself; that the adaptation, the adjustment, the obedience must come from within himself. It is from this habitual attitude of mind that the elimination of error as the shortest cut to the truth is made. It assumes the rule and looks sharply out for exceptions—not such an illogical method as one at first sight would suppose.

Another prominent logical feature is the continuous process of verification that accompanies all economic experience. The industrialist aims at the attainment of a series of specific ends; and his success or failure, the verification of his judgment, is there to hand in every instance. There is no room for doubt or for suspension of judgment as to the result. All economic conceptions carry suspended over them the sword of Damocles in the form of pecuniary loss as the penalty of mistake or failure. If a chairmaker makes a mistake of an eighth or a sixteenth of an inch in his calculations or measurements, the mistake is immediately present to his eye. No considerations of casuistry or reference to supposititious deeper principles can alter the result or remedy the error. A man in business buys a bad

article or sells at the wrong time. No revival or re-adjustment of the logical process or appeal to authority or tradition can make good his loss. He has just to initiate another economic incident free from the errors of his previous failure. There is thus brought ever before the mind of the industrialist the plain incontrovertible and unvarnished truth about himself and actions, that veracity of mind toward itself, which is not enjoyed to the same extent in any other sphere. That is the reason why there is less self-deception among businessmen than among others. Your accuracy, your success or failure, is presented unfailingly to your conscience. Thus industrialism is a true logical process with the fact of verification by experience always thrown in.

Then, again, another logical feature which is important, characteristic and nearly distinctive is looking-forwardness, prescience. An industrialist's work is ever before him—before him in the sense that it is work still to do and for the future wants of the community. In all stages from the aim itself to the means and onward to the end, the worker stands behind his work, looking forward to it. He sees it in the future, he achieves it piece by piece in the future. The past is nothing to the economic worker, the present much, but the future most of all. He lives the future in his thoughts and work more than any other class. Economic work is always melting away. Economic man must perforce provide to-day for the wants of to-morrow. And in proportion as this sense of prescience is realised by the industrialist will his success in business and in life be.

We have another truth to point out. All industrial action is a form of judgment. You have to determine a purpose, you have to select materials, you have to form an article, you have to sell and you have to buy. In all these cases a deliberate and decisive act of judgment has to be formed. The industrialist has to come to a specific conclusion on the evidence before him every hour and minute of the day. He is bound to do so. At first the industrialist with the responsibility

of success or failure before him is slow and cautious—nay, the responsibility of decision is trying to him. With experience this sense and power of judgment grows upon him until it comes to be a joy and instinct. Before a case is almost laid before him, the swift, decisive and unhesitating pronouncement is made. This is what the world recognises as decision of character, a useful but not ornamental or always agreeable type of character. There are more such final unalterable judgments to be verified in the result, in industry, than in any other sphere of the exercise of human judgment.

We must also observe here that the logic of industry is applied logic—logic adapted to the common work of everyday life. Industrialists are not concerned about its subtle and multifarious forms, its speculative use or the vast philosophic and metaphysical issues depending on its exhaustive knowledge and treatment. But even in the matter of practical logic we do not realise in industry its supreme economic importance. It is of the essence of successful industry. Perhaps the reason is logic is taught solely as an occult science. Thus a few mental processes, all that is practically useful of which could be laid down in a few paragraphs, is spun out on the rack of verbiage to half a dozen volumes. What we want taught in our ordinary and evening classes is the logical processes involved in common everyday work. The accurate use of the senses, the conditions of full and correct observation, the tests of sound conclusion. We want to exhibit before the eyes of the children in material and mechanical operation the primary principles of correct thinking, to demonstrate in material objects the flaws of reasoning. It is a delusion that logic can be best taught in language. True logic is a relation of actuality, of material forms, of actions and events, as well as mental states and forms. And it can be best, simplest and quickest taught in actuality itself. We have Professor Jevons's mechanical symbolism in our recollection. We must never forget that large masses of the people have no literary, introspective or

psychological faculty. Indeed the more energetic and practical the individual, and these are our most effective industrialists, the more they shrink from the mental and moral sciences. Knowledge conveyed through language never reaches them in an effective sense. They must be taught through the instrumentality of physical objects with which they have constant and intelligent cognisance. And the knowledge thus conveyed, and we mean the logic of material forms and actions, is as useful to them in their everyday labours, as great an advantage as the syllogism is to the advocate and the canons of the inductive process are to the scientist.

CHAPTER XXXII

THE LOGICAL DIFFERENTIATION AND RE-SYNTHESIS

WE have said that industrialism as a movement is self-determined and self-contained. On the other hand, it is part of the world movement being related to, no less than differentiated from, all other movements. To apprehend industrialism in all its fulness we must show its relationship to and mergence in all other forms of activity and thought, and at the same time its mode of recovery of itself, the *special* characteristic which re-determines it as an organic movement and organic unit. As is the case of all specific movements, we must exhibit industrialism as a universal particular on the one hand and a particular universal on the other. It must be a universal particular as participating in *esse* or in *posse* with all other movements. It must be identified with a particular universal to give it individuality and determine it as a movement in itself, a movement of absolute logical independency. Industrialism would be lost in the flux of the world's activities if it had no characteristic principle to identify it and recover it in thought. That principle is appraised utility. It will be objected that our principle is not one but two, utility and mensuration. It will be said we can think of utility as a universal and mensuration as a universal, but cannot think of utility mensurated as one universal. The two terms are limitations upon each other. All that is true enough, but in a practical movement dealt with under the practical reason the whole movement is itself a limitation, so that a true universal stripped of all limitation would not supply us with the principle of characterisation we are seeking for. We have therefore

to be content with a particular universal particularised ; a union in this case in terms of quality and quantity. After all, such a complex is consonant with the situation, not only because it represents that dualism that runs through all the industrial movement from the foundational distinction between needs and satisfaction, purchase and sale, competition and static rest, but also because these terms have long been associated together in common use, and are used with all the facility and homogeneity of a simple term.

Of course there is one fundamental relation connecting every living being with industrialism in an effective and permanent tie. Every individual has to subsist, and that subsistence has to be provided for, so that no matter how distant a man's thought and action may be from the field of economics he is a participant in the results of economic labour. Every field of thought outside of industrialism must have an influence within it. Let a person immerse his thoughts in the most distant speculations, such a detachment from industry is only possible by the provision for subsistence industry herself has made, and that withdrawal from active industry affects the extent and character of the interests of those within it. Even abstract or particular scientific pursuits affect industry through the spirit of the age they create and their impress on the aggregate thought continuum of their time. Of such a character is the connection of philosophy, religion, history, antiquities and other sciences and pursuits. They affect, some of them profoundly, human affairs, but their influence upon industry is distant and indirect.

Some sciences are of the nature of conditions under which alone industry can be successfully pursued. Such are biology and medicine, the condition of mankind in health and disease, whose services, however great, we cannot bring under our principles of characterisation. They have utility and value, but a utility and value which cannot ordinarily be accurately measured, and therefore cannot be estimated in terms of specific value.

Other sciences, by their discoveries, lend indispensable aid to industrialism, yet are not within the movement itself. It is a moot point whether industry is most indebted to itself or to the world of thought outside of it. For instance, what would seem further removed from industry than the science of astronomy? Yet it is through the scientific demonstrations of that science that all the vast network of seaborne commerce is alone possible. Such obscure phenomena of force as magnetism, with its static relation to the magnetic pole, furnish our seamen with an unseen, though constant, guide over the darkness and indistinguishable identity of the waters. How distant geology is to industry, yet what essential service it has given. Thus it may be said of all forms of systematic thought that they are at once wider and narrower than industrialism, that industrialism at once embraces and excludes them, our principle of characterisation alone the identifying criteria.

We cannot go deeper in our logical differentiation than the all-embracing facts of space and time amid which all phenomena are set. Yet in these widest of all conceptions we have phenomena concentered by our principles of identification. In industry timeous and spatial relations have utility and value in the industrial sense. They not only govern the orderly sequences, coexistences, position and movements of phenomena, they are not only complementary relations in that the phenomena can be described in interchangeable terms of either relation, but that particular time and particular position are of themselves and in themselves of the nature of economic utility and value. Neither a commodity nor a service is of economic value which is not at the required place and at the required time. In proportion to this precision of place and time is the usefulness and value of the phenomena.

Advancing to the physical sciences, and in especial to physics and chemistry, we come to the most extensive range of economic phenomena. Indeed all the applied sciences are practically of the nature of

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industry. They embrace all our mechanical contrivances, forms of force, structures and undertakings. There is no doubt of the intimate connection. We cannot say they are coterminous, for there is much in physical science that has no connection with industry *per se*. Still, claiming for economics all that is useful and appraised, we bring in an immense field of the thought and activity of these sciences into our *schema*.

We have shown how much of morals affects industry; but we have also shown how much of it can be claimed as appertaining to industrialism as a specific movement. For morality is not only a condition of industry, but is an industrial force of which can be predicated utility and specific valuation. It is a form of force as necessary and effective as skill and ability; and in so far as it is recognised as an industrial force and can be characterised as useful and valued in terms of specific price, it comes within and not without the terms of our differentiation.

Has art an economic side or does the sense of the beautiful break through the prosaic trammels of utility and price? Of course there are many poets, artists and musicians who give to the world of the creations of their insight and fancy, and who would feel insulted if the word useful was applied to their work. We admit much of it is not useful, and more of it of no value in the economic sense. Still the industrial arts will be admitted to have a utilitarian side. They add a pleasurable attractiveness to what would otherwise be an unobtrusive necessity. Industry supplies not only necessities and wants but desires and pleasures. Individuals are prepared to work and accumulate that their æsthetic instincts may be gratified. Competition in sale has assumed the additional form of gorgeous coverings. Other things being equal, the most gorgeously plumaged bird, or rather hawk, wins the day. Art thus has utility. Has it also the other factor of monetary value? We are afraid it has. It would not be taken as the ally of business if it was not only useful but profitable. In fact, there is nothing where

the prosaic pecuniary element enters more keenly than in the productions of poets and artists and musicians. Their lofty idealism and dreamy æstheticism does not prevent them haggling with their publisher about a few pence a line, or a guinea more or less for a picture or a performance. Still, in our differentiation we are content to bring within our movement all that of art which is utilitarian and which can be shown to possess specific value.

We come next to literature. It deserved a chapter devoted to its special consideration in a work treating of political economy instead of the sentences we give to it. There will be no dispute as to the usefulness of the dissemination of our knowledge, nor as to the service rendered by business methods and business men who put that literature in the hands of the public. Neither will it be disputed that so far as the business aspect is concerned we have true economic interest. But what of the author's position? Can you describe justly a literary effort where the incentive or necessity is that of supplying the writer with the means of subsistence other than an industrial effort? His productions are not necessities of life, but neither are those of the silk mercer. We think that the facts are that *littérateurs* and artists live on the borderland of the movement, where a superficial casuistry might to appearance bring them within a movement that has foundationally a different motivisation and starting-point. We are content to claim for industry the mechanical agency of publication.

We are left with the instrumentation of formulation—the sciences of mathematics and logic. The one formalises matter, the other thought. In what position do they stand to the logical determination of the industrial movement? They are the instruments of the process. Therefore though we should be unable generally to postulate of them, our principle of characterisation, they still remain of the essence of the movement as instruments of the process. Still we put the question, Is there any part of mathematics and

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logic of which we can say they have economic utility and value? We have seen that large departments of modern industry are only possible upon the formulation mathematically of averages and probabilities. They bring to light the contingency they provide for. These contingencies are bought and sold in the open market. They require for their manipulation and adjustment the aid of skilled intelligence. That skill or service is remunerated, just as the services of our artisans are remunerated. All that of mathematical science which is thus employed and paid for we claim to be inside the terms of our definition.

We apply the same questions to logic itself. Apart from its being the instrument of differentiation, can we say that logic in industry is so far concentered as to partake of the character of utility and value. That logic runs throughout the whole phenomena of economics from the simplest to the most complex matter we have already abundantly shown. That the limits of economics are not the limits of logic is self-evident. To all the sciences logic is of their nature and essence. To differentiate logic as belonging to economics from the universal of logic can we apply our principle of appraised utility. First, does logic possess the quality of utility? Of all industrial instrumentation logic is the most useful and necessary. Its being necessary and being universal in the operations of industry does not deprive it of its quality of utility. On the contrary it accentuates it. As to the second characteristic appraisalment, value, mensuration, we think the answer no less certain. What is the test of rigidly-applied logic to an industrial operation? It is not the satisfaction of the personal judgment, or conscience, or taste, as in the case of science, or morals, or art. Though, as a matter of fact, these are all there also. The mere personal satisfaction of having produced an article good or perfect is neither the end nor the authentication a producer seeks for. It is the sale, the purchase of the article, the verification of another mind or of public opinion, and that verification in the form of a practical estimate of

its value expressed in terms of money that the industrialist wants. It is to secure that result logic is applied to industrial processes, and without this final form of approval, a money payment, the industrial effort is futile and incomplete.

Thus, then, we have logically differentiated industrialism from amid the flux and heterosity of phenomena and exhibited it as a logical unit. We have shown that while it exists as a part of the world movement it is disjoined as a limited, individual and independent movement by the principle of appraised utility. But this principle is not in itself a real universal in the sense that we have not, and for the moment could not, strip the conception of all concretion or exhaust the abstraction until it became a true universal, free and disassociated from all other universals. We say we could not for the moment, because industrialism being a practical movement realised in action, our principle of characterisation must also assume, for purposes of recognition, a practical form. But the necessity of that restraint passes away after the logical differentiation. If we stop at the moment of differentiation our determination leaves our movement isolated, cut off from the world of thought, a thing free in itself in a universe of law. We have then to do now, what we would not do before, bring our principle of characterisation within the categories of reason. Our principle was appraised utility. That principle resolves itself into utility and mensuration. Utility is a judgment of quality. Value, price, mensuration is a judgment of quantity. We have now got two universals. But these two universals in industry are reciprocally related. This reciprocity is a relation essential and existential, and as real, though not expressed, as quality and quantity. We have thus a third form of the judgment, relativity. But what is it utility and valuation is applied to. Before they are critically applied there is an antecedent condition no less essential. They are applied to certain forms of action to determine whether such actions have realised certain results of which these judgments stand in the

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relation of criteria. That antecedent action is force directed to a specific purpose. Now force, though a form of existence, is not a logical principle. Neither is purpose. But the means connecting the purpose and aim, the principle of adaptation itself, is of the nature and essence of reason. In that adaptation, in that constructiveness we find the modality of the industrial movement. And in thus identifying industrialism with the four forms of the judgment, with quality, quantity, relativity and modality, we have linked industry on to the higher notion of reason.

(*P.S.*— We intended here to examine industry as a logical movement under each of the Kantian categories. We would have seen then how much was in and what was unincluded or unembraced under the Kantian logic, a mutual service. Meantime we leave the question—might we also say suggestion?—open to public criticism.)

CHAPTER XXXIII

INDUSTRIALISM AS A MOVEMENT IN ITSELF

WE are now in this position. We have taken out the industrial movement from amid the flux of phenomena, and we have taken it out by a principle of characterisation which is in reality two—utility and value. These two are related to the universal of reason through the categories. We found in industrialism all four forms of the judgment. But, as is the nature of all logical forms of characterisation and limitation, what is excluded is *per se* larger, more extensive, than what is included. It must be so because the phenomena dealt with have many other qualities than the one or the ones selected as the instrument of differentiation. That which is intentionally lost to sight for the moment is not less of the nature of the industrial problem than what we have brought specifically to view. To apprehend industry in its widest aspect we must go beyond the categories again and view the movement as an organic whole. Now, what is the nature of an organic movement apart from the logical forms on which it is stretched? It is a manifestation and realisation of will. Manifestation implies purpose; realisation implies an end. We cannot predicate less of a conscious movement than purpose and end. We have then to examine industry from the two extremes, (1) of its initiative following upon the exercise of conscious will, and (2) its goal and satisfaction realised in its end. Between these, between the purposes and the end, lies the great body of wants, means and states which links and binds them, and forms what we may

term the subjective of the movement. It is as well to remember, however, that even under this wider view we are still working within limitations. We cannot say that industrialism exhausts or is coextensive with experience.

Viewed as an organic whole we observe of industry that it is a movement, living, organised, homogeneous, continuous in time and world wide. We see it is ever undergoing change and adjustment, decay and repair, growth intensively and extensively. Its stability is not that of physical states, but the equilibrium of marshalled forces. It is governed by the laws of physics, of organic life, and of moral and intellectual states, forms and forces. We have said that industry is a movement of purpose. But it is not a free or voluntary movement. It is a movement of necessity. Man must plan and work to live. So that even approaching the initiatory conception of industry from the outside, we are brought face to face with this idea of necessity, and through the idea of necessity with the inexorable purpose that runs through the universe at large.

Throughout this movement of conscious force we see an end in view, an end of necessitated satisfaction, and an end which, in its recognition, binds the movement together and supplies to it another principle of identification. Because some writers have defined economics as the common business of life. All is of industry which is of the purpose or intention of industry and from that point of view.

How shall we describe this end? We have the historic definition that industry is the production, distribution and accumulation of wealth. And, certainly, when the energies of mankind have given birth to these visible and tangible creations, there cannot be the slightest doubt that these are of the nature of wealth and the purpose of industry. Yet we are conscious that the accepted and historic formulary does not fairly represent the full nature of the modern industrial movement. Since the first formal description of the movement at the hands of Adam Smith,

and later, at the hands of John Stuart Mill, the movement has gone beyond the lines those writers laid down. We include more and mean more than our ancestors did. The mere acquisition of wealth in the narrow, selfish, personal sense of the old economic authorities is not the dominant, and still less the determining, conception in the movement as now existing. We say when the phenomena dealt with come into view, come under the canons of our *special* logical identification, they are the consequence, the sequence of a wider movement, itself the necessary antecedent of formal industry, and itself wider, more important and more significant.

It would indeed be a marvellous thing if industry had remained of the character of a hundred or even fifty years ago. It would be much less marvellous to believe it had undergone a radical change. Is it not unreasonable to think that a movement to which had been given consciousness, self-interpretation and formulation should not thereby (as all other movements under the same experience have been) be elevated, strengthened, brought into more harmonious sympathy and purpose with the world movement. Look at the world as it is now compared with the world of a century ago. Are our increased knowledge, our keener intellectuality, our higher moral ideals, not to be reflected in that movement which is the necessity and form of duty of the largest mass of humanity. We see that industry has been emancipated from prejudice and contempt. Now the best blood, talent and education of the age enter its ranks. It is the main policy of states, the principal solicitude of statesmen. It seems therefore reasonable to anticipate that through all these influences our present conception of industry should be wider, that its point of mergence in the world movement through its goal or end should be higher than ever before.

We say that industry as an end is transcended, or is set in and appears in that wider movement which seeks to effect or establish the victory of man over nature.

This purpose of victory is the dominant form of opinion to-day. It was not the conscious conception formerly. Nothing is more noticeable than this change in the public sentiment. It is revealed in our literature, in our science, in our public undertakings. It tinges our public opinion and our press sentiment. It is a note of hope, courage and mastery. Whenever there is an obstacle, or difficulty, or inconvenience retarding or thwarting man's purposes, that obstacle must be surmounted, those difficulties or inconveniences swept away. In bygone days, in tropical climes, amid lower civilisations, man stands passive and submissive to the forces of nature. In more favourable circumstances he is selective and adaptive. He selects natural materials, he seeks the aid of favourable natural forces. Still, the idea of victory, of mastery over nature, is not yet a full conscious and operative conviction. But now where is there a force, a difficulty, or a contingency man is not prepared to tackle. We hear of areas the size of provinces to be reafforested, deserts to be rewatered and irrigated, isthmuses cut by canals, mountains tunnelled, straits bridged, seas enclosed, pumped dry and tilled, every continent traversed by railways from end to end, and our oceans ploughed by floating palaces at high speed. New substances and forms of force have been invented, which in themselves are not only new but absolutely unique. They are unknown to nature, and, so far as we can conceive, impossible to any un-intelligent cause. The power of waterfalls are transmitted in the form of electricity to give light and heat, to drive and propel in distant cities. The articulate sounds of the human voice have been transmitted through the air distances of nearly 2000 miles. These and a thousand other triumphs, and thousands of daring thoughts and schemes, mark the depth of the conviction that the physical world and its forces, seen and unseen, are there for the service of man and to do his pleasure. Man is not only conscious of his victory over nature but of his own inborn superiority to it. The sense of the majesty of terrestrial forces, a dark shadow that long

threw its baneful cloud over the human consciousness, terrorising, belittling and saddening humanity, is gone for ever like a hideous nightmare. It is of this movement and amid this movement that the industry of to-day rises to consciousness. Industry is a part of it, giving to and receiving aid from it and lending realisation to its conceptions. Science and the mechanical arts are part of it. The individual consciousness rings with it, and the national sentiment is inspired by it. But for us here we point out that it is the point of contact between one side of the subjectivity of the industrial movement (the end) and externality or the world movement.

Viewing, then, the subjectivity of the industrial movement, we say it is far removed now from those natural states, conditions and forces amid the obscurity of which it dimly had its origin. It is not only distant in the sense of time but distant in the sense of process and distant in the sense of thought. There is a greater element of artificiality in our life now than ever before. We are further removed from nature, in tastes and wants, and the means by which we satisfy them. Viewing the number and character of our wants, our mechanical processes for their satisfaction, and the organisation of industry, we say the number of specific stages and movements involved in them are not only numerically greater, but in their synthetic character still further removed from those simpler and elementary forms in which the movement originally had its rise. In a word, that the immediacy appertaining to the economic initiative of the year 1900 is itself a complex one, and far removed from the immediacy of close identification with nature from amid which it started. And this opinion leads up to its corollary that industrialism as a movement has resulted not only in a breach of the continuity of nature, a complete severance with natural conditions, but the obliteration of the steps and stages of industrial ascent. We have not only climbed up to a higher plane, but we have kicked away the ladder by which we ascended. For good or for

evil man stands irrevocably committed to the maintenance of life on arduous and artificial conditions.

Industrialism is a movement for the attainment of specific ends. These ends are material, they are visible and tangible. Nothing is of the nature of industry which does not result in the creation, modification or adaptation of some material object or article. But this industrial and material result is not a mere matter of physical effort or means. Every economic result is the product of intelligence, a result of thought. We may observe, then, of industry that it is thought resulting in action; thought crystallised in material form. This is one of the *special* characteristics of the industrial movement. It is thought descending through action to material forms and objects. Where thought has no practical material result, whatever else it may be, it is not industry.

We can say also of the industrial movement that in it thought, knowledge, moral states and conditions are of importance. Already ability, in contradistinction to mere physical effort is the predominant economic factor. Much of labour is as efficiently performed, indeed, more efficiently performed, by means of machinery than by manual labour. The area of economic activity based upon simple data scientifically formalised is widening every year. Thus describing industry not from the results, the commodities, but from the point of view of process, of means reaching certain ends, it would be much more truly described as a movement of thought, knowledge and morals than that of physics, material objects and mechanical means.

A fundamental principle pervading and governing industry is the law of parcimony, the attainment of all specific economic ends at the smallest expenditure in materials, energy, time, space and thought. This principle is important, not only in itself, but because it is not the way of nature or the process of unconscious life. In these the lavish expenditure of energy and materials and the length of time involved for the attainment of specific ends sends a cold shudder

through the thinking and sympathetic mind. For instance, look at the immense number of eggs shed by fish to maintain their species. Or the immense number of seeds and spores scattered to the winds on the remote chance of a few falling upon suitable conditions for germination and growth. We have seen the sea under great heat in the spring time seething with incipient life like a brewer's fermenting tun. The same disproportion between the ends in view and the extent of the means employed is shown in industry before it has reached the consciousness of scientific knowledge. Industry as a whole we believe to take not less than three times now the amount of results from the same materials that it did a century ago. What was obtained blindly from some products then is now obtained knowingly, and certainly at a tithe of the cost. Neither is this law of parcimony operative in other departments of thought. We cannot say that severe economy of means to ends is a *sine qua non* of religion, poetry, literature, law or science. But in economics, after the initiatory energy directed towards specific economic ends, the attainment of these ends with the smallest expenditure of means is of the very nature, the very crux of the problem.

As a matter of fact, economic results are year by year attained at a smaller expenditure of energy. Life, individual life, is now more easily supported. It is maintained at a growingly less sacrifice. Not so long ago large masses of men had to pass their life in unremitting toil simply to sustain existence. Now, merely to sustain life does not employ a man's whole time and energies. Over and above his compulsory labours for simple sustenance he can further exert himself to acquire wealth. He is left at his choice with more time for other pursuits. It has become easier for society as a whole to provide for those classes of special service and knowledge, who in ever-growing numbers labour for the discovery of truth, the dissemination of knowledge, and the elevation of the race. Our growing body of knowledge requires a large

proportion of the numbers of the community permanently devoted to its pursuit, preservation and presentation. Our more successful conservation of economic energy enables this expropriation to be made without undue sacrifice on the part of the community. The corollary to increased economic efficiency, or to the law of parcimony, is more time, more energy expended, or capable of being expended, on other and higher interests, on interests other than those of mere material subsistence.

We have already referred in these pages to the increased and increasing momentum of the industrial movement. It is necessary briefly to refer to it here to secure a true representation of the movement as a movement, and not as under logical differentiation only. How, then, are we to describe this notion of growing momentum. It is really a general conviction born of the current opinion and literature of the day, and contact with business life and people. We cannot take up a journal to read, or make a journey through the country, or mix with the captains of industry, without having this conception of momentum borne in on you. It is not only the immense accumulations of wealth, though these are wonderful enough, our cities spreading, our factories growing in number and size before our eyes, but it is the depth and rapidity of the whole current of business that impresses you. You see an energy, a power, a purpose in the very eyes of those you meet in the street that was not there in the easy-going times of our forefathers. If we could measure the industrial voltage—individual and collective—of the age, we are confident the power would be represented in figures our ancestors never dreamt of. It is this growing momentum which holds out the hope of constant reward to inventors, to the class of close observers and original thinkers. It is also the justification of the optimistic principle. The pessimists in industry are those who are always wrong and always left behind in the industrial race.

We have already stated that industry is a movement

of growing complexity. Our wants are more varied, our operations more numerous, our *personnel* more diverse, our knowledge vastly extended. The inter-relations of all these have multiplied not only in numerical but in geometrical ratio. It would be a natural supposition that, following upon this enhanced complexity, there would be a corresponding growth of difficulties, uncertainties, miscarriages and risks. The reverse of this is the case. Industrial operations have increased in stability, a large proportion of them have merged in certainty. It is a feature of scientific industry to investigate and master all variations or uncertain elements as to results and processes as well as to the accessories and contingencies relating to the movement. This growing complexity and this growing stability in complexity seem to be reconciled through another principle running through industry, the steady passage of industrial phenomena from the particular to the general and from the general to the abstract. We will put it another way. With the growing complexity of industry there is a movement of corresponding simplification, but the simplification arises in, is a consequence of, and is subsequent to, the movement of complexity. At its dawn industry begins in the one. The person is the unit, not in the sense of a particular under a concept, but in the sense of isolation, when society is merely numerically connected, is counted by heads, not classed or covered by common notions. Industrial man's acts also are of the nature of independent particulars. They could not be justly or logically described as operations. Even his wants are conceived of as particulars. He has no conception of them as the manifestation of an ordered physiological process, any more than of himself and fellows as parts of a coherent social synthesis. In his processes there is no co-operation as there is no logical continuity. He is in the state of particularity without logical cohesion.

As man rises to civilisation his wants 'become methodised, his habits and labours regular, the element of prevision enters his life, he stands related to a more

extended timeous relation. Isolated acts of co-operation grow into that collective or associated effort which, being bound together by common purpose and common ends and identical thoughts, becomes of the nature of the notional. These collective industrial units are now industrial concepts, existing and operative despite constant change in their particulars. To the notion any particular particular is indifferent. This growing notionism extends while the importance of the particular becomes less until industry becomes a vast organised movement. And what is an organised movement but *mergence* in a higher notion.

Again we must not think this notionism is confined to the aggregate of the industrial movement. It is not only a final abstraction on all industry, but it exists as a concept at every stage of that industry, and on the broad movements and interests of which the universal of industry is the final thought. Thus taking economic wants as an example, we differentiate between necessities and desirable things. Leaving aside the "necessities" for a moment, we have in the "desirable things" an extension of choice in the further variation under which "desirable things" is comprised. In the objects, leisure, pleasure, culture, philanthropy, wealth, power, we recognise aims for the satisfaction of which an industrialist may choose to labour. Each of these has the same or similar conceptual character which originally gave form to "desirable things." This subsidiary diversity remains unreconciled until it is seen that the supply of desirable things is as essential as that of our necessities. As the person is made up of body and spirit, so the supply of man's psychic wants are as essential as his physical. Thus necessities and desirable things are reunited in economic wants, and economic wants again merge in the higher notion of the purposes and end of industry; because it is only through industry every or all of these objects can be accomplished. Thus the conceptual conditions which develop as stages or phases in industry through the foundational splitting up of industrial aims to the

many concrete forms of their satisfaction, later again become notional in the wider knowledge and higher purpose of these aims viewed as a whole.

Take the instrumentation of industry. The primary forms are of the simplest character. They are single in purpose, rudimentary in form. Practically a stick to scratch the ground and a branch of a tree to harrow the seed in is the primary conception. These were succeeded by tools. These also were of the nature of isolated particulars viewed severally though partaking of the conceptual character. The synthetic element was lacking. What a revolution the first machine was. It was a synthesis of many parts and many forms of motion and power for the attainment of a common end, that is, common to the individual parts of the machine. Yet each of the parts is essential to the synthesis or structure. In the isolation of particularity (that is, in the stage of tools) any one particular of the kind is indifferent, is non-important. In a modern instrumental synthesis the absence or inadequacy of the most minute part, of even a single screw, destroys or impairs the whole purpose of the machine. But it is the revolution in thought that is synchronous with this innovation that we dwell on here. If a mere tool be regarded as a particular, we must think of this machine as a concept, a generalisation embracing many particulars, and we think this complex with the fidelity and facility that our ancestors thought of their isolated particulars or simple instruments. If it be said we contradict ourselves in that we have said that to the concept and the notion the particular is indifferent, and that we say now that the machine, a concept, cannot lack the most humble particular in its construction, we reply there is no contradiction, as the machine though a concept in itself has become a particular in a higher notion—machinery—and under that notion the particular is again indifferent. We have now in the term machinery in general a notion as homogeneous, as clear, as effective in thought and operative in action as we had earlier of a machine as a concept. We could

go over the whole field of industry and show that this generalising movement runs through it all; that all through the growth of interests, processes and organisation there arise synthetic moments and movements, stable and dependable, the crystallisations of action and thought. We have said sufficient, however, to show the reason of the growing stability amid the growing complexity of modern industry. In the concept and notion we have not only a real representation but a real connection between thought and things. The concept or notion is not in the mind or term alone, it is in the things themselves, in the material objects, the physical processes, the intellectual abstractions to which have been given objectivity. A true thought is as objectively real, as existential, as stable and permanent as the law of gravitation itself.

But there is in industry a part in which the conceptual is removed by successive abstractive steps from the immediacy of concretion until it becomes notional. And we differentiate between the concept and notion only in this, that the latter is further removed from the concrete. The foundational synthetic principle is the same. These abstractions, though at first logical inferences, become through verification notional facts. Now we say of these they are of truth, and they are as much verities as those concepts based upon the immediacy of economic phenomena. That they are as true is proved by their being matters of business contract. For instance, insurance and risk, anticipations and options are founded upon very obscure contingencies, which have been reduced to order and certainty through processes of very intricate algebraic calculations. Indeed the abstract in industry is more stable than the concrete. It is concretion that is always in a state of flux. What so stable, for instance, as the higher abstractions of industry, free trade, competition, the liberty of the worker, demand and supply. These are also not only more stable, but they are the most influential. Sound economic policy, that is the higher notional of industry, does more for the accumulation

of wealth among the people than a very considerable growth in the individual efficiency of the labouring population; though, of course, both are desirable. Finally, we observe this abstractive growth, this access of notionalty is apparently not only now a dominant, but an ever-increasing factor.

Another specific movement involved in industrialism is that it is a movement of thought toward formulisation. That is that thought, reason and psychic states, being correlated through action to static relations and material forms, thereby lends itself more fully to exact observation, generalisation and synthesis. We should say that of all subsidiary services that industry renders to the world or of all phases or states that industry assumes in relation to knowledge and life, this is the most important and characteristic. For observe the process. Life is a slow unfolding, we believe an evolution of purpose. It is through the scientisation of this evolution that man comes to know himself, what is immanent in him, what is immanent in the world beyond him. The difficulty of man is the unscientised unverifiable element, the plain incontrovertible facts about himself, and which, however, to be explained must be admitted. Now in industry man realises his thoughts under things which lend themselves to accurate scientific measurement and computations. And this process of measurement and computation takes the form of specific mathematical, algebraic and arithmetical formulation, of all forms of formulation the most certain. Not only numbers and weights, but prices, estimates of value and worth, generalisations of hundreds of millions of particulars expressed in two or three figures, and these generalisations truer than any generalisation out of the exact physical science; and data so obscure as the casual accident or the temporary absent-mindedness of the individual. So we may say that if all that is of science must assume the formulary of the exact sciences, industry has brought under these conditions more of

human thought, motive and action than any other and all other sciences combined.

But that is not all. Industry is only a phase and a side of human existence. It is only a part of the great world *schema*. If the other parts of that *schema* throw light on industry, not less does industry throw light on the *schema*. Nothing has shed more light upon the obscure problems, upon the deep undercurrents and tendencies of modern life, upon the new movements, than just the wonderful facts brought out in the statistics of modern industry. Looking at the modern sociological movement we see that the largest part of its inspiration and authority lies in the revelation of the inner life and condition of the people which industrial formulation presents that sociological movement with.

Industry may be viewed as a vast process of verification. Apart from the phenomena formulised, the specific idea of actual verification is involved. Not the mere process of logical verification, though that is true enough and important enough, but verification in the true adjustment to and alignment with actuality. All logical verification it does have. From the first scientific hypothesis to its tentative experimental verification, and then on through adaptation or rather entry on the current business of the world to actual visual and tactual observation as to the exact point of harmonious relations between the thought and the thing. What is the final verification? These prefatory logical processes are not results. They are only processes leading to results. The final result is the absorption and contact of the products of industry in and with the human constitution. The food we eat becomes a part of us. If we don't eat it, despite all process of all preliminary logical judgment, it is not of us. When we eat the food, shelter ourselves under the clothing, enjoy the pleasures we have laboured for, then we have taken into our individual personality that distant effort of energy and thought that we first began with. It is for ever of us. The ultimate verification of economic truth is then seen in the bright eyes, vigorous frames,

capacity of work and endurance, that will power in the individual that we see around us in the industrial movement; and which industry has not only invoked but torn from the great universe at large. If that power is honestly captured and is returned in all purity and honour to the great mother nature from which it is taken, what victory awaits us. On the other hand, what penalty. Failure in economic adjustment is individual, social and national ruin. We have taken from nature what we have not returned to her loyally and legitimately.

That leads us to this other truth. Viewing the industrial movement as a whole, what would we say was the final generalisation? Not to view it as a presentation in thought, nor yet as a merely mechanical evolution, but viewing it as an entry of energy upon this mundane sphere, how shall we ultimately summarise it? We shall say of the whole industrial movement that it is the measure in quantitative and qualitative relations, all the race concretes to its own purposes of outside nature.

We return again to the facts of consciousness, to that world of thought, which in its reality and objectivity furnishes the really permanent and stable element upon which industrialism is stretched. To the industrial movement consciousness must have a specific relation, one that strikes us at once as of real industrial service. Synchronously we have the great progress in human thought, in judgment, knowledge and mental states, and we have the vast development of modern industry. Now, we think the means of service to be the great hastening of results; the shortening of the period of time involved, the crowding into the same period of time of a vast deal more successful and useful work. When we look out on nature we are struck by the stupendous periods of time which nature, with her sphinx-like gaze into the infinity of the future, calmly awards to the issue of her purposes. In the evolution of the most trifling organic function she unhurriedly appropriates millions of years.

So also in industry when it has not attained to consciousness, thousands of years elapse before a new truth ripples the mind of toiling man, and before that new truth permeates the race. But it is no less evident the tremendous acceleration in time the more fully developed consciousness of the race has conferred upon industry. All industrial processes are shortened, the distance in time separating the purpose from the end is reduced, a specific moment of time is richer in human experience than ever before. For the first time in the history of the universe the saving of time has become a principle, a fact, and a contingency to be accounted of.

Again we say of industrialism, as a movement in relation to consciousness, that it leads to recognition of itself and thence to knowledge, and through knowledge to choice and freedom. We see in this organic movement that process of growing consciousness and freedom that we see now in the individual, and the dawn of which we see in the race. What can be more of freedom than initiative and determination? In bygone times industry was not free, not free in the sense of which we now treat of. Industry was only imitative. We say man formerly adapted himself or placed himself submissively in relation or contiguity to certain forces and conditions of the nature of which he was ignorant, though of the benefit derived from which he was fully cognisant. He was in a position of absolute dependence upon natural events and contingencies, of the inner nature of which he knew nothing. He had no choice of two or more alternatives. He followed the blind traditions of his ancestors. But with fuller knowledge man's position in relation to industry was transformed. He conceives a purpose, looks about in the armoury of knowledge for the means, and bends the forces of nature to his will. He has freedom of purpose, freedom of choice, freedom of ways and means. His detachment from the limitations of *unknown* natural law is greater. His range of choice is that of the whole body of knowledge of the industrial movement. That common knowledge is so extensive as to be practical

freedom. If an individual has only one course open to him he has no choice, and therefore no freedom. If he has an alternative course he has choice. But if his choice is practically unlimited he has practically unlimited freedom. As we said at the opening of this chapter, industrialism, however widely viewed, is still a limitation. When therefore we speak of freedom, we speak of freedom within those limitations to which man, as an industrialist, must ever be subject. We only say that industrial knowledge has given freedom to industrialists within their movement, and that every contribution to industrial knowledge extends the limits of choice, and therefore of practical freedom.

Here we must also point out that choice, freedom, are of the apparent nature of individualisation, of the nature of particularity. We have seen that this tendency to isolation is met in knowledge, and corrected by the concept and the notion. Now, is there in humanity a corresponding principle of synthesis? Does humanity itself become of the nature of the notional? Is there more in associated humanity than in the isolated individuals composing it? As to that widest of all questions we say that if there is not now more in associated humanity than in the total summation of all the individuals severally composing it, the time will come when there will be. But that question is too wide for our present thesis. We can say, however, that there is more in the aggregate of the phenomena of industry than can be predicated of each isolated unit *per se*. Industry as a movement has a definite, conscious and collective purpose. We see this common purpose, this access of intention, this growing purpose of industrial manifestation, is being steadily followed by a growing mass of the population. We do not mean in the sense of a larger mass of the population being better fed and better clothed. That is a merely passive relation to the industrial movement. But we mean in the active and aggressive and responsible sense. They have the same impersonal objective, an objective which remains and abides manifest and effective, we had nearly said dominative, along

with the pursuit of those individual interests which are no less of the nature of the movement. We see this consciousness, this consciousness of common purpose, is fed and strengthened by the ever accumulating body of knowledge which is surrounding and identifying itself with industry. The apprehension of the general elements involved in the movement has become clearer and deeper. The general element interests many more minds. It furnishes a policy to states and statesmen. It is the life interest of a vast body of thinkers and writers. It has formed an atmosphere of interest and opinion, a thought continuum which unconsciously colours the thought and guides the conduct of the age. Identity of thought and opinion, the fact of thinking on the same notional plane, is as powerful a bond of union as sharing the same affections and emotions. All these varied stimuli and ties, all brought together in concentrated purpose, give to industrialism a power and force vastly greater than any analysis on individual lines would suggest. Just as we can predicate of many associated particles of matter, properties and relations which cannot be predicated of them as individual particles, so we say that in a human movement bound together in common purpose and in a common interest, there are forces and influences and relations above and beyond what can be predicated of them as individuals. Moral and intellectual states are contagious, complementary and assistive to each other. These aggregations of thought and sentiment are non-existent apart from plurality and association. As though there is no more in a nation viewed as a whole, as a unit, than the mere summation of their several isolated personalities and qualities. If it was only the common inspiration of patriotism, there is more in a nation, as a nation, than in the population counted and estimated as individuals and isolated factors. So we say of industrialism as a movement. It is the common purpose and the identical and common interest of millions. They acquire the same knowledge, and form the same judgments. They are buoyed by the same hopes, de-

pressed by the same fears. They labour and sweat together. They have formed in these facts a social unity, homogeneous, differentiated in thought, interest and action from all other world movements, easily to be recognised and treated of, and with vastly enhanced powers in virtue of that unity. Industry as a movement has more inherent power and force or energy than the mere aggregation of the individual particulars would suggest.

We are now in this position. We have examined industrialism as an organic movement wherein the terms of our *special* logical characterisation (which terms were drawn from the nature of wealth itself) were held to be indifferent or in abeyance. To cover all the phenomena treated, we looked for the widest limitations consistent with identification, and we thus viewed industrialism as a conceived purpose and realised end. This purpose and this end is united through the means. Now, what is behind purpose, means and end? It is the common, unifying principle of will. Will is the common means that binds every thought and action throughout the industrial movement. Industry is action, action is of the nature of will. But will is not confined to industrialism. It is characteristic of all human activity. In virtue of that universal of human experience we join industry again to the world movement. We have now a universal of all human experience. Is that "experience" universal a true universal, linking us on to the cosmos? If it does not, then we leave industrialism an empirical science indeed, but without that ultimate verification which all moral science aspires to. Is will a true universal? does it bind the universe together as it binds industrialism? We think it does. We think will not only a true universal, but the Universal. And there we leave it.

CHAPTER XXXIV

CONCLUSION

THUS then we have presented to our readers a picture of the industrial movement as a living, present-day force as we ourselves see it.

We have motivation for undertaking this effort. Among other considerations, we were impressed by the fact that industrialism had not been presented as life, purpose, action, which are the most distinguishing features of the movement. But we had others. We sought to elevate the dignity and honour of industry, of the labourer not less than the master. We sought to remove that subconscious feeling that a life spent in honest industry was a life wasted, or at least a life that could be transcended in its services to humanity. There is no nobler or more useful form of service to humanity than industry, than the full and generous supply of man's every need at the price of the least of sacrifice that the most active intelligences and the hardest workers of the age can supply. It is not only a service, it is a necessity, and as a necessity it is the discharge of a primary duty, the duty lying nearest to hand. But we have also shown that, for the development of character, the training of the intelligence, and for world usefulness, no other field of human experience surpasses industry. All art, science, culture and civilisation was born after it, within it, and are continued by its aid. Viewed as a mode of life, it is a discipline and training. Viewed as a practical movement, it is action directed to usefulness and governed by justice. Industry is the democratisation of art, of the æsthetic. As a

system of thought, it seeks after precision, formulation and verification.

But what does industry formulate? Itself, its own phenomena; all its labours, interests, judgments and opinions; its forces, its sympathies and associations. The generalisations of industrialism are those of facts and forces itself has made. The industrial particular, concept and notion are living existential facts before we perceive them or apply them in our thought.

When we view industry as a whole and as an ultimate fact, we see it is the subsistence of the race on the least expenditure of time and labour. This is still its trend. Every year it takes less time and less human energy to support life. There is thus every year more time and more energy for effecting other than industrial objects. As the centuries roll on industry shrinks and ultra-industry expands. But the reason is not that man's material wants are less fully and adequately supplied. On the contrary, they are more fully satisfied than ever before. But by reason of the growing efficiency of industry, of her processes and organisation, she attains many times over the same results with a less expenditure of means. Civilisation, art, science, culture, are spreading around us, are growing in the magnitude, the variety and the insight of their several interests. But they grow by the aid and the leisure or time provided by the effectiveness of industry. As industry becomes more scientific and wise and efficient so much the more of the race's time and energy can be turned into other channels and directed to other objects. Thus we have two broad divisions of human activity, industry and ultra-industry. The first is essential and must be carried on. The other is all that is left over and can be spared from industry. The first step, then, to aid the spread of civilisation, to aid the spread of art, science, culture, of all the other than industry, is by promoting the efficiency of industry, its knowledge, methods and organisation. It is only thus that the means and time for the pursuit of other purposes, the realisation of other objects can be obtained.

We take, then, the fact of human subsistence at the least cost of time and energy to be the ultimate fact in industry. But that ultimate fact only brings us into contiguity, only into nearest contact, with the universal of human experience. And human experience, though born within industry, is now a greater fact than industry itself. How, then, are we to correlate this newer and greater fact than industry to industry itself on our final generalisation? We say, viewing ultra-industry as a whole, it can only correlate in two possible contingencies. It can only reflect back on industry as the potential or the actual. As the actual, as the world of fact and knowledge outside of industry, of knowledge and thought made outside of industry and without industrial intent, we say it is there open and free for industry to cull from, to tear from the dreaminess of pure science to the practical wants and services of mankind. On the side of the potential, the not yet scientifically verified, it is suggestion, choice, experiment; it is the field of hope and invention, the opportunity to bring within the range of practical experience, of direct and certain verification, all that the mind of man can conceive on lines of true agreement with the universe at large, the universal in thought and being.

THE END

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